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PROJECT CHECO SOUTHEAST ASIA REPORT

ATTACK ON CAM RANH 25 AUGUST 1971

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REPORT

ATTACK ON CAM RANH

25 AUGUST 1971

15 DECEMBER 1971

HQ PACAF

**Directorate of Operations Analysis
CHECO/CORONA HARVEST DIVISION**

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PROJECT CHECO REPORTS

The counterinsurgency and unconventional warfare environment of Southeast Asia has resulted in the employment of USAF airpower to meet a multitude of requirements. The varied applications of airpower have involved the full spectrum of USAF aerospace vehicles, support equipment, and manpower. As a result, there has been an accumulation of operational data and experiences that, as a priority, must be collected, documented, and analyzed as to current and future impact upon USAF policies, concepts, and doctrine.

Fortunately, the value of collecting and documenting our SEA experiences was recognized at an early date. In 1962, Hq USAF directed CINCPACAF to establish an activity that would be primarily responsive to Air Staff requirements and direction, and would provide timely and analytical studies of USAF combat operations in SEA.

Project CHECO, an acronym for Contemporary Historical Examination of Current Operations, was established to meet this Air Staff requirement. Managed by Hq PACAF, with elements at Hq 7AF and 7AF/13AF, Project CHECO provides a scholarly, "on-going" historical examination, documentation, and reporting on USAF policies, concepts, and doctrine in PACOM. This CHECO report is part of the overall documentation and examination which is being accomplished. It is an authentic source for an assessment of the effectiveness of USAF airpower in PACOM when used in proper context. The reader must view the study in relation to the events and circumstances at the time of its preparation--recognizing that it was prepared on a contemporary basis which restricted perspective and that the author's research was limited to records available within his local headquarters area.

A handwritten signature in dark ink, appearing to read "Ernest C. Harbin, Jr.", written over the printed name.

ERNEST C. HARBIN, JR., Major General, USAF
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FOREWORD

In 1965, as the United States became more actively involved in the Indochina War, the need arose for the construction of jet-capable airfields and logistical bases. The Cam Ranh Peninsula provided an ideal site for one of these bases, due to its central location on the South Vietnamese coast and its natural deep-water harbor. After the selection of the peninsula, construction progressed rapidly; Cam Ranh Bay Air Base became operational on the first of November, 1965. The Tri-Service Ammunition Storage Area, completed in October of 1966, provided Cam Ranh port facilities with the largest munitions storage area in the theatre.

After the Tet Offensive of 1968, the Communists placed increased emphasis on economy-of-force tactics to inflict heavy losses on Allied equipment and personnel. The combined sapper and standoff attack against Cam Ranh Bay Air Base on 25 August, 1971 was one of the most successful enemy assaults in the Vietnam War.

This Project CHECO report points out the continued potential effectiveness of enemy sapper attacks against most major SEA bases, and outlines some failures at Cam Ranh to meet the increased threat with adequate security measures. Cam Ranh Bay was but one of many such bases in the theatre. However, this report examines in detail the major and highly successful attack at Cam Ranh, and thereby illuminates the ingenuity

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and determination of the enemy in exploiting vulnerabilities of base defense. The report may lend perspective to other attacks and elements of base defense.

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Map of Republic of Vietnam showing location of Cam Ranh Bay Air Base.

FIGURE 1

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Map of Military Region 2 showing Cam Ranh Special Sector.

FIGURE 2

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INTRODUCTION

During the early morning hours of 25 August 1971, the Tri-Service Ammunition Storage Area (TSASA) of Cam Ranh Bay Air Base (CRBAB) was the target of a highly destructive sapper attack. Bright fireballs illuminated the sky and shock waves travelled for miles around, awakening a sleeping population. By hitting what the populace perceived to be a "well-defended" target at an opportune time, the Viet Cong achieved a desired propaganda effect four days prior to the national elections. The sappers penetrated the munitions storage area, attached time-delayed explosive charges to its contents, and fled unharmed. In coordination with the intrusion, hostile forces fired two volleys of rockets onto the other side of the base, apparently to divert the attention of security personnel.

Massive detonations lasted for several hours and scattered live munitions over a wide area. The success of the attack can be measured by the extent of damage. Approximately six thousand tons of ammunition, valued in excess of \$10.3 million, were destroyed. The explosions caused \$174,000 damage to the TSASA, and the concussion effects alone resulted in \$99,000 damage to real estate on the base proper.^{1/} Fortunately, there were no fatalities; five security policemen received minor wounds.^{2/}

This report describes the conditions that prevailed prior to the attack, the attack itself, and the subsequent defensive changes. A

[REDACTED]

description of the Cam Ranh Special Sector (CRSS) and, specifically, the TSASA, the forewarnings of the attack, and a chronology of the assault are followed by an analysis. The analysis focuses on the vulnerabilities and deficiencies of base defense and precedes the account of resultant changes in security measures. The conclusion alludes to the lessons learned for planning of security operations in the future.

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CHAPTER I

DESCRIPTION OF THE CAM RANH AREA AND
TRI-SERVICE AMMUNITION STORAGE AREA

The area contiguous to Cam Ranh Bay falls within the geographical confines of the Cam Ranh Special Sector, one of six autonomous cities within the Republic of Vietnam (RVN). Since 1965, its population had quadrupled to over 100,000; the majority of the people resided on the coastal plain along the principal highway, QL-1. The coastline curves in a southwesterly direction and then extends sharply to the northeast, forming the inner shoreline of the Cam Tho Peninsula. Cam Ranh Bay is sheltered from the South China Sea by Cam Ranh Peninsula which stretches approximately 30 kilometers. The gateway to the bay lies between the Cam Tho and Cam Ranh Peninsulas. (See Figure 3)

The mountainous regions to the west and north of the bay offered a haven to local Viet Cong/North Vietnamese Army (VC/NVA) units. The enemy had base areas in Ba Cum, 23 kilometers north-northwest of the air base, and in Dong Bo, 18 kilometers west-southwest, provided a launching area for frequent stand-off attacks against the peninsula.

The Cam Ranh Peninsula attaches to the mainland directly south of the Dong Bo Mountains. The narrow arm of the peninsula expands gradually from a width of two kilometers to nine kilometers at its southern base. Military forces predominantly occupied the land mass, although small communities of local Vietnamese nationals were

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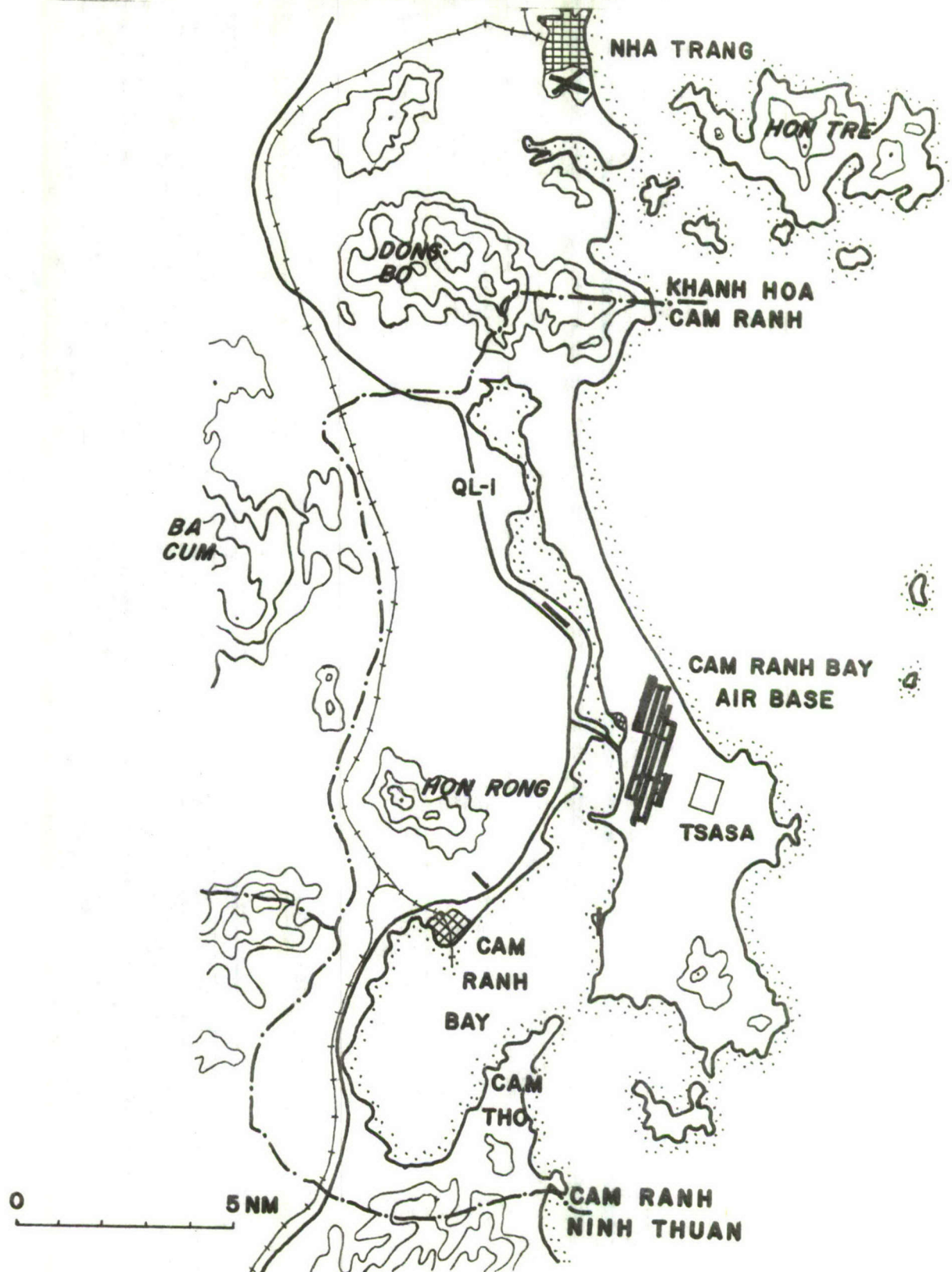
interspersed along the bay shore. Many Third Country Nationals (TCN) as well as Americans lived in military compounds. Major installations in addition to the Air Base were the U.S. Army Support Command (USASUPCOM), the U.S. and Vietnamese Coastal Surveillance Force ("Market Time"), the Vietnamese Naval Training Center, the 6th U.S. Army Convalescent Center and the 22nd Replacement Battalion (U.S. Army). The major link to the mainland was via My Ca Bridge, located south of the air base runway. (See Figure 4)

Cam Ranh Bay Air Base was an expansive complex that lay midway up the peninsula. In its southeastern sector, the Air Force portion of the Tri-Service Ammunition Storage Area was situated adjacent to territory under the control of the USASUPCOM. Two distinct sections used jointly by the U.S. Army and U.S. Air Force comprised the TSASA. The U.S. Navy stored small amounts of munitions within the Army sector. In 1969, a Memorandum of Understanding between the 12th Tactical Fighter Wing and the U.S. Army Support Command delineated the security and maintenance responsibilities for each sector.^{3/} As used hereinafter, TSASA applies only to the Air Force portion. (See Figure 5)

The TSASA was nestled in a small, heavily-vegetated basin which slopes inland from a sandy beach on the South China Sea. Rugged, rocky ridges covered with jungle growth surround the depression. The TSASA spread over 180 acres; its perimeter stretched 11,500 feet.

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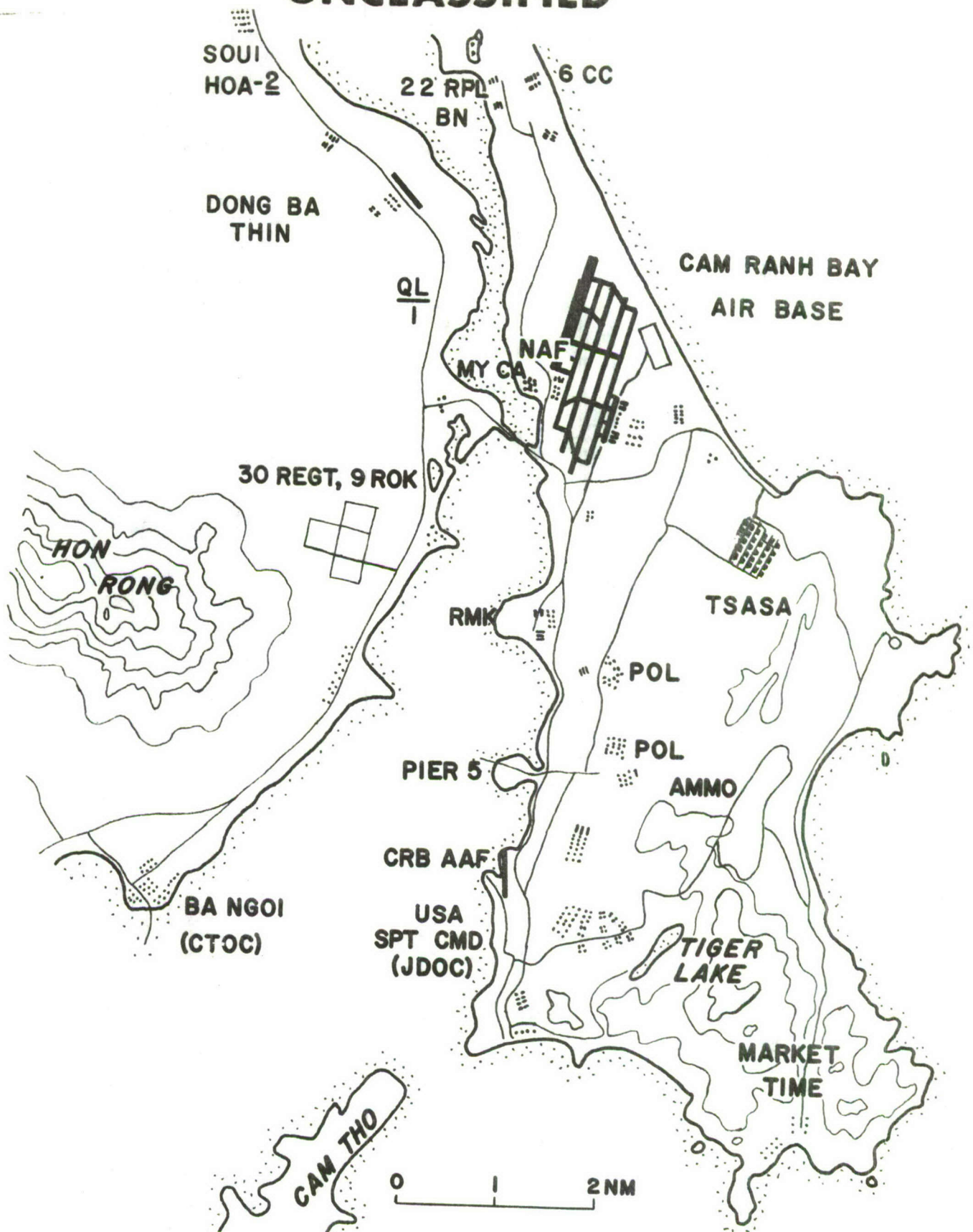


Map of Cam Ranh Special Sector and vicinity.

FIGURE 3

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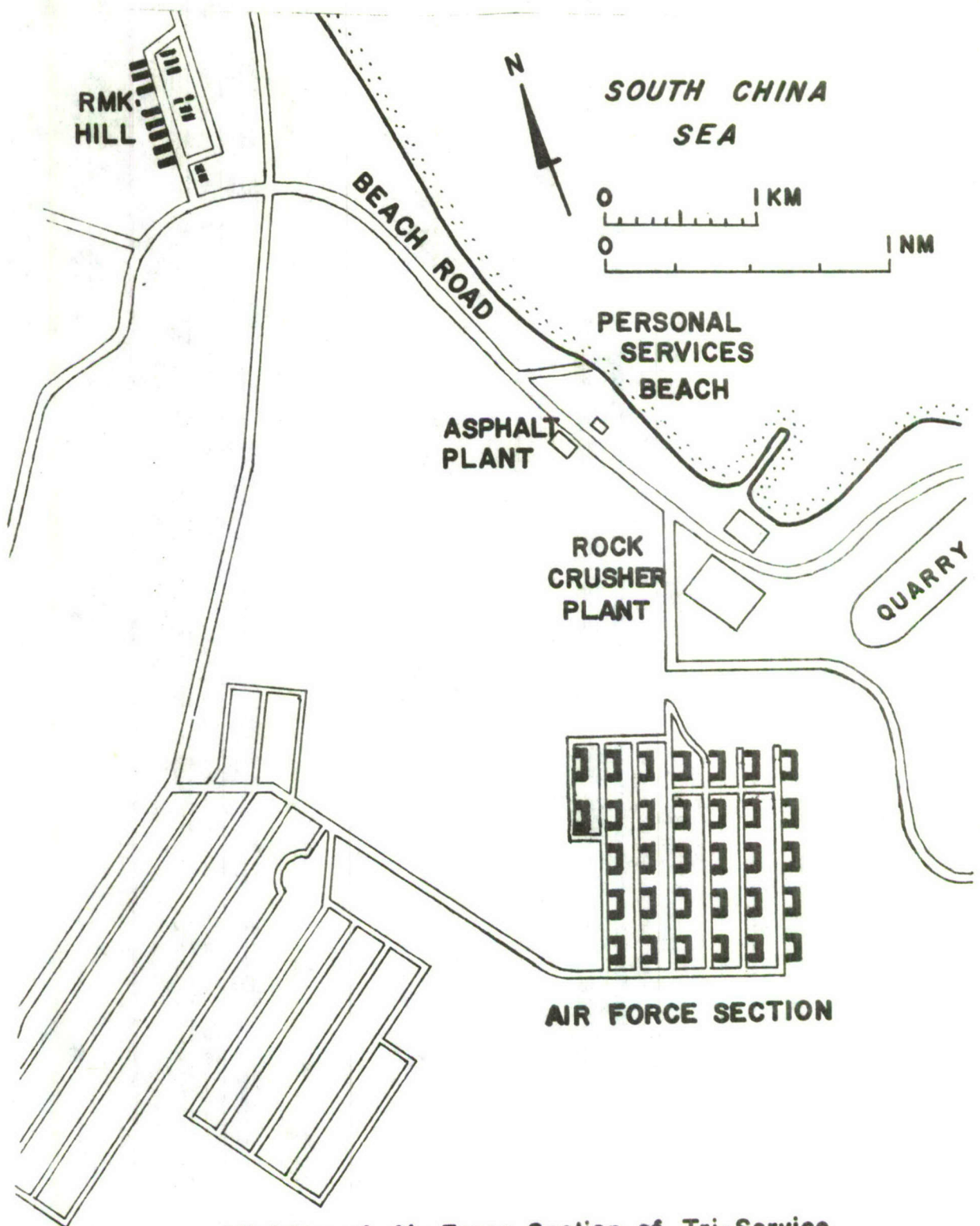


Major installations in the vicinity of Cam Ranh Bay AB.

FIGURE 4

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Vicinity of Air Force Section of Tri-Service Ammunition Storage Area.

FIGURE 5

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Within the storage area, there were 32 berms (storage revetments) arranged in six rows of five berms each, and one row of two berms. The berms were U-shaped, facing in a west-northwesterly direction toward access roads which ran between each row. The barricades on the remaining three sides of each berm were mounds of sand covered with a sealant to retard erosion. Within each berm was a slab of concrete, measuring 57 feet x 128 feet. The concrete storage pads were separated by 375 feet along a row and by 350 feet from one row to the next.

Each berm was designed to accommodate 250,000 pounds Net Explosive Weight (NEW); however, PACAF doubled the authorized NEW to 500,000 pounds by a waiver granted in February, 1968.^{4/} In addition to the barricaded revetments, there were three above-ground, unbarricaded magazines ("Holes"), one of which was unsuitable for storage of munitions. Hole 1 had a storage capacity of 15,000 pounds, and Hole 2, with a waiver^{5/} for one million pounds, was the principal area for the storage of napalm. About 90 percent of the munitions in the TSASA was classified "mass-detonating." Actual storage in the TSASA in August 1971 totalled 5.5 million pounds NEW, valued at \$17.5 million.^{6/}

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CHAPTER II

PRE-ATTACK

Defense Plans

The Peninsula Ground Defense Plan, 22 August 1970, and the 483d Tactical Airlift Wing Base Defense Plan, 18 January 1971, defined the responsibilities and tasks for defense of the peninsula and air base. The Commanding General of the USASUPCOM established a Joint Defense Operations Center (JDOC) for the coordination of mutual defense efforts among the different units on Cam Ranh Peninsula.^{7/} This agency was the coordination center for external defense of the peninsular installations, and JDOC maintained positive communications with the Combined Tactical Operations Center (CTOC) in Ba Ngoi.^{8/} CTOC coordinated the various operations among the Vietnamese, Korean (ROK), and American forces on the mainland. MACV Team 30, collocated with CTOC, maintained liaison with the Mayor of Cam Ranh City. The mayor delegated to CTOC the authority to act upon requests for clearance to engage suspected hostile forces. JDOC also had the authority to grant clearance to fire within its area of responsibility.^{9/}

The peninsula was divided into four zones for defense. Sector III, running from a northern grid line of 30.5 south to grid line 22, included the air base and the TSASA.^{10/} (See Figure 6) The 483d Tactical Airlift Wing (TAW) Commander was the Ground Defense Coordinator of Sector III and was responsible for the security and defense of critical areas and

[REDACTED]

facilities within the sector.^{11/} The Tri-Service Ammunition Storage Area was listed as a "Category 1" resource; it was considered essential to mission accomplishment and attractive to the enemy as a prime target.^{12/}

Dependent upon the degree of the enemy threat, the defense plans outlined the Security Alert Conditions (SACON) to be implemented. When the local enemy threat was considered minimal, the air base maintained SACON White during the daylight hours for the normal day-to-day alert posture.^{13/} SACON Gray was assumed when intelligence reports indicated that an increased state of readiness was required. It provided a means of intensifying security vigilance by adding key security posts at certain vital areas for an undetermined length of time. The Commander normally declared SACON Gray during the evening hours.^{14/} He placed the installation under SACON Yellow when reliable intelligence reports exposed a higher threat of enemy attack at an undetermined time.^{15/} The security force manning at Cam Ranh Bay Air Base remained the same for SACON White and SACON Gray; however, the number of security positions increased during SACON Yellow.^{16/}

Defense Forces

Allied security and defense forces of the Cam Ranh Special Sector included Vietnamese, Koreans, and Americans; the composite strength totalled over seven thousand armed personnel. After the devastating sapper attack against the POL storage facility at the USASUPCOM in May 1971, an additional American infantry battalion deployed to the CRSS to

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conduct security operations. This new unit supplied the principal deterrent to stand-off attack against the peninsula.^{17/} ROK army units occasionally conducted sweeps in enemy base areas and secured some of the mainland installations. Limited numbers of Koreans provided security on the peninsula; a ROK outpost was located north of the air base on the narrow arm of the peninsula. Although the Vietnamese units comprised the largest friendly force in the area, most provided static security, and only four Regional Forces (RF) companies conducted offensive operations.^{18/}

ROK and U.S. Army units supplied artillery support from four different Fire Support Bases (FSB). FSB Freedom, near the ROK Army Regimental Headquarters and ROK artillery battery, contained the largest howitzers in the area--8-inch and 175mm guns. The other FSBs possessed 105mm artillery pieces, with the exception of the ROK battery which included 155mm guns. The disposition of the FSBs generally enabled effective artillery coverage of the Cam Ranh Special Sector.^{19/}

Aircraft and patrol boats comprised the external forces. Helicopter gunships and O-1s from Dong Ba Thin (DBT) Airfield assisted in aerial surveillance. A limited number of Swiftboats and Yabuda Junks from the U.S. naval facility provided coastal support of the peninsula. A few ill-equipped boats were not capable of stringent enforcement of the three-kilometer restricted zone on the seaside.^{20/}

While responsibility for external defense rested with non-Air Force agencies, internal defense of the air base, and specifically

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the Tri-Service Ammunition Storage Area, was the function of the 483d Tactical Airlift Wing's Security Police Squadron. The authorized manning of the squadron was 552 personnel; 539 persons were assigned at the time of the attack.^{21/} During the evening hours under normal alert conditions, "Phantom Flight" manned 150 positions along the perimeter, around key resources and on mobile teams. The Security Police Squadron received augmentees from other units and maximized the use of its own personnel during SACON Yellow. JDOC tasked two U.S. Army platoons to aid the Air Force internal security function during an emergency situation.^{22/}

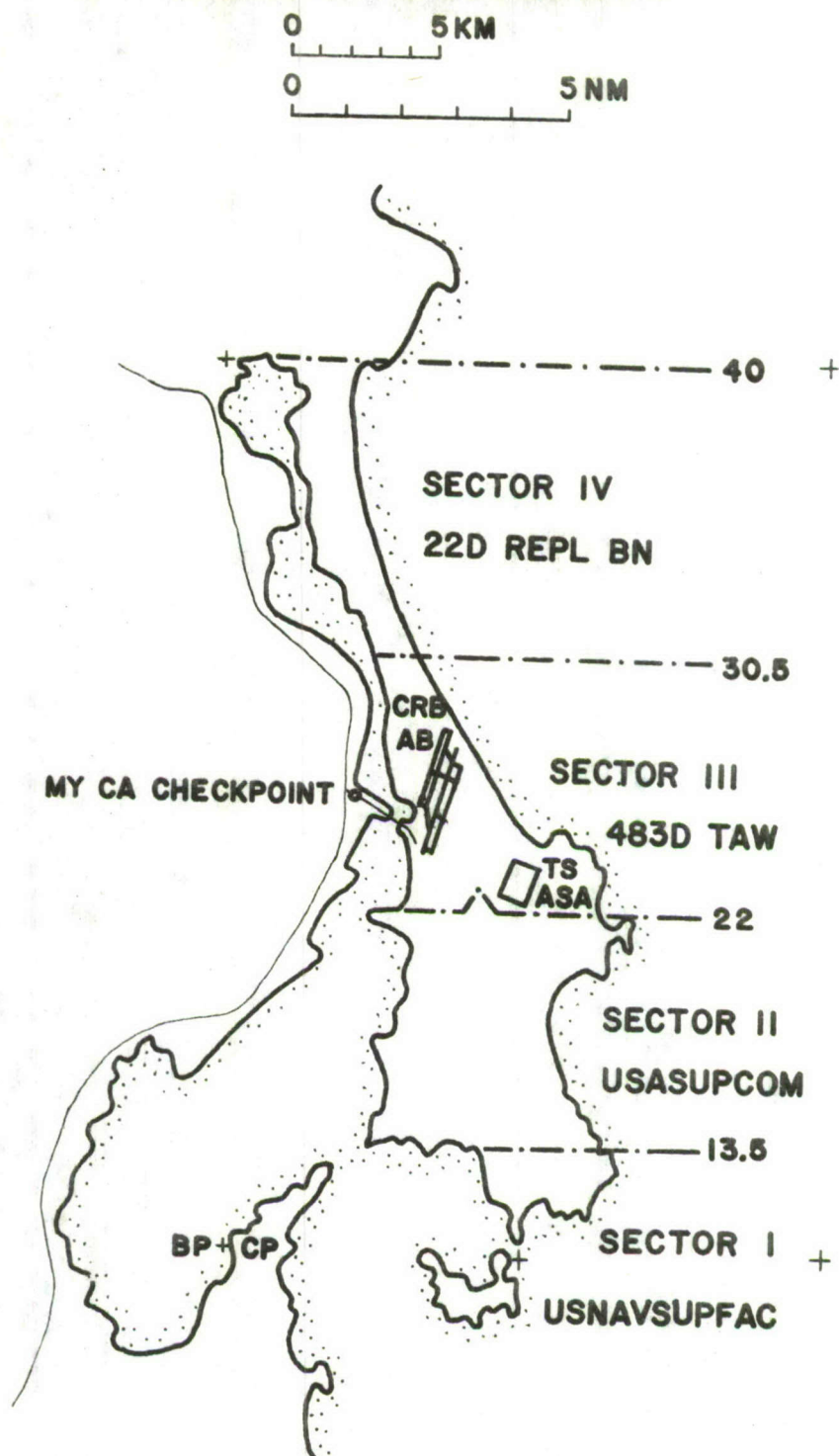
Enemy Threat

The 483d Tactical Airlift Wing's Base Defense Plan of 18 January 1971 recognized the increased potential threat to the base. It stated:^{23/}

Since January 1969, enemy activity in the Cam Ranh Bay area has increased significantly. The presence of well-equipped VC/NVA forces in the area indicates that more aggressive and frequent enemy actions can be anticipated.

During 1970, Cam Ranh Bay Air Base was one of the most frequently rocketed 7AF installations, and it was definitely the most desirable enemy target in the Cam Ranh Special Sector.^{24/} The number of rocket attacks diminished during the first part of 1971, but the sapper threat remained high. A significant demonstration of the enemy's sapper capability occurred in May when a cell of sappers destroyed large quantities of POL at the Cam Ranh U.S. Army Support Command.

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Sectors of responsibility on the Cam Ranh Peninsula

FIGURE 6

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[REDACTED]

Numerous indicators pointed to a possible strike by enemy forces against CRBAB during the last two weeks of August. National, regional, and local intelligence reports selected the 19th through the 31st of August as a high threat period. 7AF officially listed the sapper threat to be high and the attack-by-fire (ABF) threat to be moderate.^{25/} A special threat message from 7AF on 23 August alerted its installations with the following excerpt:^{26/}

Intelligence reports indicate plans by the enemy to launch a small-scale offensive throughout the RVN to disrupt the 29 August lower house elections. Although GVN [Government of Vietnam] units appear to be the primary targets, there are indications that some U.S. and/or joint installations may also be targetted.

JDOC passed information of a similar nature to local Allied units.^{27/} One message read:

...the enemy may launch widespread sapper assaults prior to 29 August . . . these attacks are intended primarily to influence voters and probably will peak in the week prior to the elections.

A Military Region II (MR-2) Headquarters message cited the evenings of 21 and 24 August as likely highpoints of enemy activity.^{28/}

The local Office of Special Investigations (OSI) warned of probable attack between 19 August and 3 October. The OSI report outlined possible enemy tactics and objectives: "Enemy capabilities include water sapper attacks against targets such as fuel dumps, ammo areas and My Ca Bridge."^{29/} Several reports of agents, other than OSI Area Source Program agents, substantiated the evidence of imminent attack. One source, rated

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completely reliable, reported on 19 August that the VC had told him that they would attack at least one compound in the Cam Ranh Bay area.^{30/}

Discoveries of rocket launch sites suggested enemy intentions to shell the peninsula. Army units sweeping suspected launching areas uncovered four launch sites during the first part of August.^{31/} Helicopter gunships fired on unidentified individuals in the night of 22 August, causing three small secondary explosions.^{32/}

The warnings disseminated by intelligence agencies predicted events that were common during politically important periods. The Viet Cong traditionally exerted military pressure for propaganda purposes at opportune times. Ammunition and POL storage areas provided ideal targets; their destruction could be seen and heard for miles. The people of the Cam Ranh area could observe the success of sapper assaults against the Air Force POL in August 1970 and the Army POL in May 1971.

Lunar Illumination

Investigation of past attacks against CRBAB showed that most of the enemy-initiated activity occurred during periods of low lunar light. During the first nine months of 1970, 50 percent of the attacks-by-fire against the air base fell within periods when lunar illumination was below 25 percent.^{33/} A more recent study of the correlation between low lunar illumination and enemy assaults was released by II Corps Headquarters. It stated:^{34/}

[REDACTED]

In the coastal provinces, there is a significant correlation between enemy-initiated incidents and low lunar illumination. During the past three months [March 71 - June 71], the enemy has increased significantly his attacks during the new moon period of the month, on the average, one half of all enemy ABFs, ground attacks, and terrorist activities occur during low lunar illumination . . . In Khanh Hoa Province, ABFs and sapper probes on major installations roughly double.

^{35/}
The same report continued:

When an enemy campaign was in progress during a period of low lunar illumination, it was quite clear the enemy was making an extra effort, or high-points, to coincide with the period of poor visibility.

Lunar illumination on the evening of 24 August was eight percent. Reports forewarned that the "fall-winter" campaign would commence about 19-20 August, with the first phase culminating with the 29 August elections. ^{36/}

Swimmer Sappers and Sampan Activity

The reported movement of the K-92 Sapper Company in June from an area west of CRBAB to the coastal area was perhaps in preparation for water sapper probes against the peninsula. A message from the 2nd Coastal Zone Headquarters in Nha Trang related the following: ^{37/}

Twenty frogmen of the K-92 group . . . are presently operating along the coastal area of Khanh Hoa Province and Cam Ranh Special Sector. They are disguised as fishermen and are permanently present in the coastal areas.

The K-92 unit supposedly was training in the Dong Bo region, north of CRBAB; a sapper captured during a sapper attack against the Naval Air Facility in June 1970 stated that his group used Dong Bo as a staging

[REDACTED]

area. ^{38/}

Numerous probes often preceded an attack. From January through September of 1971, suspicious swimmers were detected on five different occasions, indicating possible enemy swimmer sapper reconnaissance. ^{39/}

Guards most recently observed unidentified swimmers on 19 August near one of the piers on the bayside. Suspected intrusions of possible sappers into the TSASA increased significantly during March. ^{40/}

The problem of sampan violations of the three-kilometer restricted zone intensified during the month of August. The Security Police Intelligence Section noted: ^{41/}

From 8 August to 13 August, sampan activity throughout the Cam Ranh Special Sector increased, as approximately 200-250 sampans operated within the restricted waters of the South China Sea, along the eastern shoreline of CRBAB. The situation appeared to peak at 0900 hours on 11 August when an estimated 50 sampans were observed fishing within 200 meters of the CRBAB shoreline.

JDOC Intelligence reported possible beachings of sampans on the seaside. An element of the 101st Airborne Division observed a total of four sampans dropping off an unknown number of persons on the shore south of the TSASA. ^{42/} Two helicopter pilots reported a possible beaching on the evenings of 22 and 23 August. One pilot stated: "on the two nights previous to the attack we spotted a sampan five to ten feet off the shore south of the TSASA." The other pilot said: ^{43/}

[REDACTED]

The only thing that I noticed that was suspicious was the sampan on the beach [same location as above] during the local VR [Visual Reconnaissance] flights on the two previous days. Every time we got close he would start for the sea . . . It was the same boat both days.

Various discoveries of supplies in cave complexes, located approximately 1 1/2 kilometers east of the TSASA, evidenced prior enemy presence in the area.

Intelligence Summary

The 29 August elections, the "fall-winter" campaign and the low lunar illumination combined to present an ideal time for an attack. Local agent reports further suggested an increase in activity. The recent deployment of the K-92 Sapper Company and increased swimmer/sampan activity revealed possible intentions to use water sapper tactics. The last attack against the Cam Ranh Peninsula had occurred on 11 June 1971; the lull in enemy-initiated activity afforded ample time for re-supply of materiel and adequate planning. Intelligence agencies alerted security forces to the likelihood of enemy attack; however, the specific target was not explicit until the morning of 25 August.

Enemy Preparation

The enemy course of action prior to the attack could not be determined clearly without the aid of a captured sapper or intercepted documents. One source, rated usually reliable, attributed the success of the attack to three months of planning and people "in place" at

[REDACTED]

CRBAB. ^{44/} Another source elaborated: ^{45/}

They [the VC] said there are 5-6 female cadres (sic) living at CRBAB as prostitutes, who have passed them information over the past weeks by leaving the base and returning one at a time.

No doubt, the enemy had observed the munitions storage area for some time and was familiar with the general layout and defenses.

The enemy probably gained access to the peninsula by water. A high-level Hoi Chanh (rallier to the GVN) stated that the assault was conducted by six water sappers from the 407th Sapper Battalion. The individual heard the information in a [VC] Provincial Unit meeting in Phu Yen Province approximately ten days after the attack. ^{46/} The sappers may have landed at the site where the helicopter pilots reported a suspicious sampan or possibly in the Explosive Ordnance Disposal (EOD) Beach, which is hidden from the view of observation posts. ^{47/}

The successful penetration, placement of explosive charges and safe egress illustrated the depth of enemy preparation, and the simultaneous rocket salvos indicated the degree of coordination.

Reaction to the Threat

On the 24th of August, MACV placed all U.S. installations in Vietnam on Gray Alert during the daylight hours and on Yellow Alert during the evening hours. Security Police augmented their forces to counter the heightened threat, but no additional posts were situated in the munitions

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area. However, the increased alert condition enhanced the reaction to the initial detection of intruders. An additional tracked vehicle, Quebec Delta, served as a blocking force west of the TSASA, and an extra sentry dog team, K-73, deployed to the interior of the ammunition dump.^{48/}

Eleven sentry dog teams (K-9) and five tower guards manned the perimeter; the dog teams provided the greatest deterrent to penetration into the area. A three-man Security Alert Team (SAT) and a six-man Quick Reaction Team (QRT) were mobile within the dump. The QRT, Quebec Cobra, moved within the interior and stopped at selected points and listened^{49/} for suspicious movement, and the SAT continually patrolled the roads. (See Figure 7)

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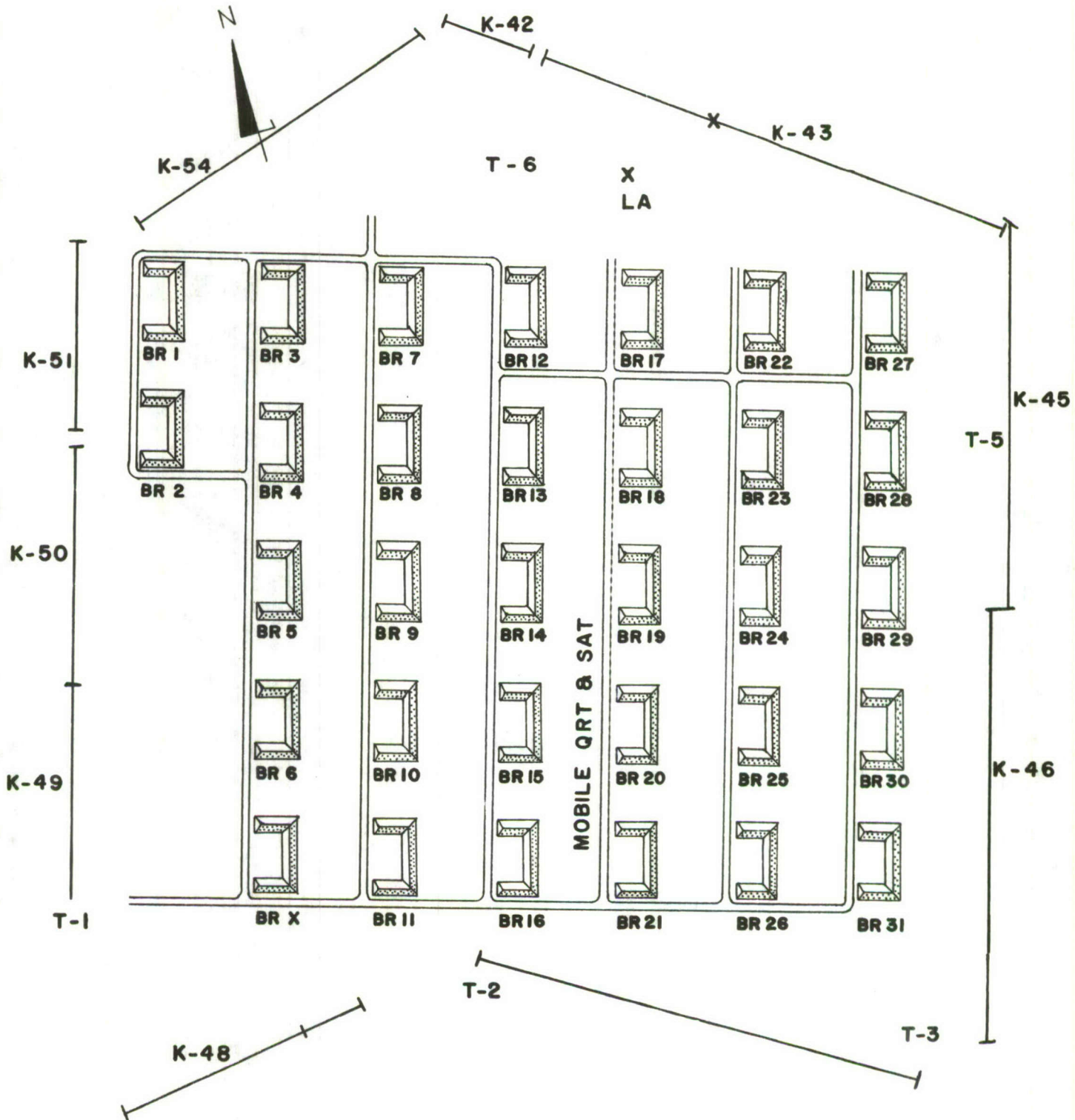
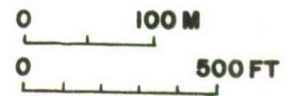


FIGURE 7. Disposition of security forces in Air Force Section of TSASA.

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CHAPTER III

THE ATTACK

During the early morning hours of 25 August 1971, cloud cover was low and heavy, and the wind was calm. The nocturnal silence was broken by a shuffling noise in the vicinity of BR-24 of the Tri-Service Ammunition Storage Area. The individual who heard the unusual sounds returned to his tracked vehicle, Quebec Cobra, and informed his team members. The first trace of intruders in the TSASA occurred at approximately 0200 hours. Subsequent search of the BR-24 area by the Quebec Cobra members, and later aided by the SAT, sector supervisor (Sierra 1) and a canine reserve unit (K-73), uncovered several sets of footprints near the revetment wall of BR-24 and another set heading east between BR-23 and BR-24.^{50/} (See Figure 8.) As security personnel were checking the BR-23/24 area, the first explosion occurred at the opposite end, apparently in BR-5. The nightmare had begun. It was 0236 hours. The "Giant Voice" system alerted the base, and security forces attempted to ferret out the enemy sappers and limit the spread of fires and detonations.

Explosions spread to other revetments in the TSASA and fires and secondary explosions intensified. Attempts to control the conflagration were futile; the high overpressure from the blasts, flying debris and scattering live munitions forced a hasty retreat from the TSASA. Security personnel became concerned more and more for their safety. They were unable to block the escape of the saboteurs, although there were detections of

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movement, sightings of footprints, sentry dog alerts, and possible observation of the suspected sappers. The hazardous withdrawal from the area prevented a complete account by the witnesses. The enemy course of action, at best, is a conjecture. This chapter merely relates the sequence of events as seen by the friendly forces.

After the explosion at the western end of the TSASA (in BR-5), the area supervisor directed four members of the QRT, and the SAT, to establish a blocking force along the road in front of BR-23/24. Sierra 1 and the other two members of the QRT then dispatched to the entry control tower (T-1) to await the arrival of the Fire Department. They accompanied the fire-fighting team to the BR-5 area.^{51/}

While providing security for the Fire Department personnel, Sierra 1 and the reserve canine unit (K-73) discovered more evidence of enemy presence. The canine had a strong alert to the direction of BR-12. The supervisor and the dog handler found footprints behind BR-5 and followed them down the road to where they led into the brush between BR-8 and BR-9. The tracking team continued on the trail down the road behind BR-8 and BR-9 to the gully in front of BR-15. An explosion from BR-15 knocked the K-9 dog handler to the ground. He retreated without further investigation of the BR-15 region.

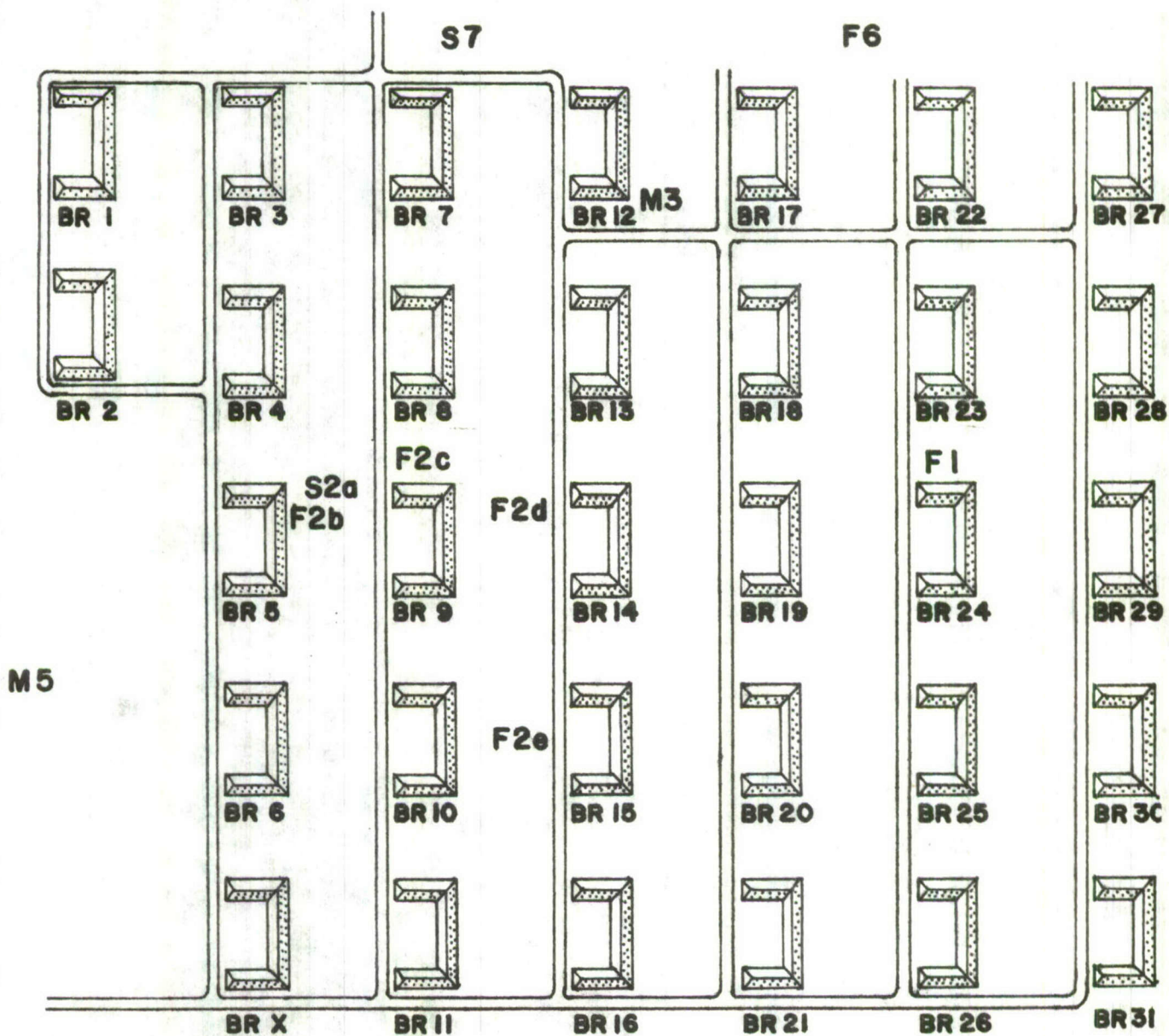
The K-73 later detected movement to the east of BR-12 during their evacuation from the TSASA. Central Security Control (CSC) cleared him

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LEGEND
M MOVEMENT
F FOOTPRINTS
S SENTRY DOG ALERT

0 100 M
 0 500 FT



M-4

FIGURE 8 Location of detections within Air Force Section of TSASA.

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to fire on the object, but the dog handler lost contact after several minutes and continued his retreat toward the perimeter.

At the opposite end of the storage area, a "Nighthawk" helicopter pilot reported two explosions in BR-28 at the time of the chase toward BR-15. A guard in T-3 offered further evidence of enemy presence at the eastern end (BR-28). He stated:^{52/}

I heard something in the jungle in front of my tower, but before I could say anything, the fourth explosion occurred in front of my tower. At this time, K-46 and myself were told to move back out of the area 200 meters to the south.

Additional proof of enemy dispersion in the dump, before the CSC directive to withdraw 500 yards from the perimeter, was the report from K-50 at the western end. He detected movement on the southern end of his post. He later said: ". . . it was human movement in the heavy brush."^{53/}

After the CSC order to withdraw at 0259 hours, the area supervisor returned to the road in front of BR-23/24 to pick up the QRT members forming the blocking force. Sierra 1 found three sets of footprints near the northern end of the road, southeast of the mortar pit, "Lightning Alpha."^{54/} The footprints led out of the dump to the northeast. (Time of the report: 0336 hours.)

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Another canine reserve team, K-74, uncovered evidence of enemy movement on the seaside perimeter. While working the fenceline on the seaside of the storage area, the K-9 unit had a strong alert toward a berm behind the napalm area, but as they moved closer, detonations from the berm and ensuing napalm fires halted their advance. ^{55/}

Sierra 1 again reported footprints, after he had departed the confines of the TSASA and moved down the beach road to the small cove northeast of the storage area. Three fresh sets of footprints lay on the sandy beach. ^{56/}

The only reported sighting of the enemy occurred between 0355 and 0430 hours. The last security policeman to reach safety was thrown by an explosion onto Market Time Road where he saw four unidentified individuals running up the road "near the bend." ^{57/}

The same person believed he heard mortar fire from the direction of the TSASA. U.S. Army Reconnaissance Teams, located to the south of the munitions area, reported a round, and hot falling debris, to impact between their positions. One of the team members stated the round passed over their heads from an easterly direction. ^{58/} The use of mortar fire in conjunction with the sapper egress could not be confirmed.

The enemy's use of diversionary rocket barrages on the western perimeter of the base was a fact. Hostile artillery units fired two volleys

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of rockets at 0326 hours and 0341 hours. The first salvo consisted of five rockets (one confirmed 107mm and four suspected 107mm); one round cratered the Bay Road. Minutes after CSC received the report that incoming rounds had ceased, sentries on My Ca Bridge reported that two projectiles impacted 200 meters south of the bridge. Sightings of rocket flashes by American and Vietnamese ground forces on the mainland confirmed the launch positions determined by calculations using back azimuth.^{59/} EOD personnel determined a third rocket which impacted on the East Ramp to be a "burn-off" 2.75" rocket from the TSASA.^{60/} (See Figure 9.)

Shortly after the second enemy-launched salvo of rockets, an AC-119 arrived over the Tri-Service area and provided nearly an hour-and-a-half of illumination with flares. The mortar crew supplied artificial light before secondary explosions became too intense, and the "Nighthawk" helicopter scanned the area with its searchlight until the aircraft diverted to the mainland to check out suspected launch sites.^{61/}

As daylight approached, outpost sentries on the seaside (0-3, 0-5, 0-7, and M-2) notified CSC of unidentified objects in the water in front of their posts. The sappers apparently marked all the observation positions with well-placed fishing buoys, some as close as 50 to 100 meters off the shoreline.^{62/} At 0650 hours, a sentry at 0-9 reported objects in the sea to the north and swimmers and sampans to the south. The personnel at the outpost fired on the fleeing swimmers, but the range was

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too great for effective fire. Two sampans, one trailing the other, retrieved two swimmers and then temporarily disappeared behind a protrusion of the coastline directly north of the EOD Beach. The observers again saw the sampans heading out to sea, but they could not positively identify the sampan which recovered the swimmers.^{63/} (See Figure 10.)

While the swimmers and sampans were under observation for approximately five to ten minutes, CSC relayed requests to JDOC for helicopter and watercraft support. Helicopters from DBT and patrol boats were not available for immediate reaction.^{64/} Twentieth Special Operations Squadron (SOS) scrambled two helicopters in response to the plea relayed through the Wing Command Post (WCP), but the aircraft arrived on the scene too late to assist effectively the efforts to apprehend the suspicious sampans. By the time the helicopters were airborne, the sampans had already intermingled with several other fishing boats in the waters due east of the TSASA. Ground observers directed the gunships over the sampans; the pilots informed CSC that one boat contained women and children and the other contained four Vietnamese male fishermen with fishing gear.^{65/} The JDOC log version read:^{66/}

A guard at CP109234 [0-9] reported there were swimmers north of his location. Requested to fire on same. Clearance not received from CTOC. AF CSC advises that sampans in question have women and children on board. Also have fish nets and fish. AF advised to follow MACV Rules of Engagement [ROE] if fired upon.

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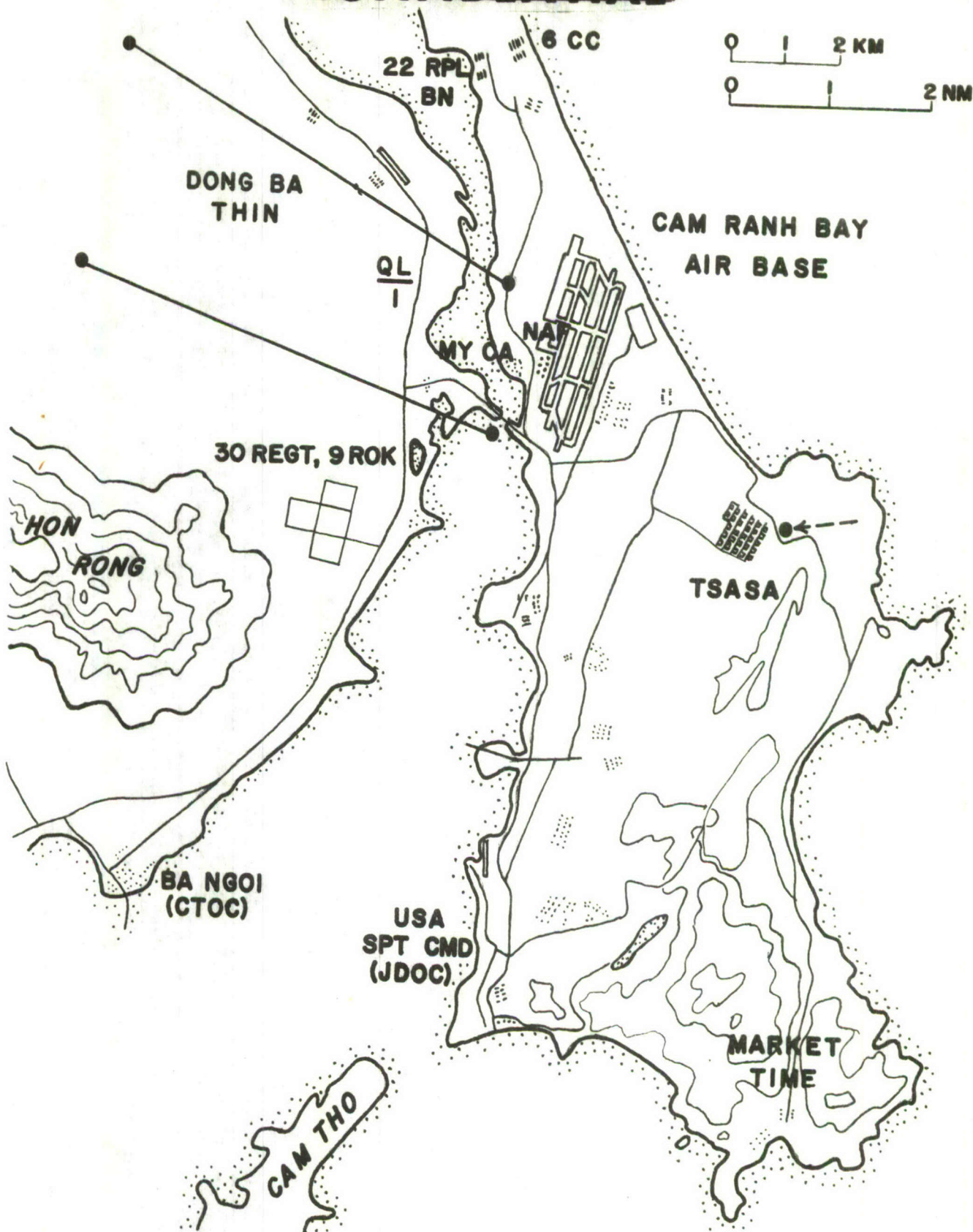


FIGURE 9. Rocket launch sites and impact points.

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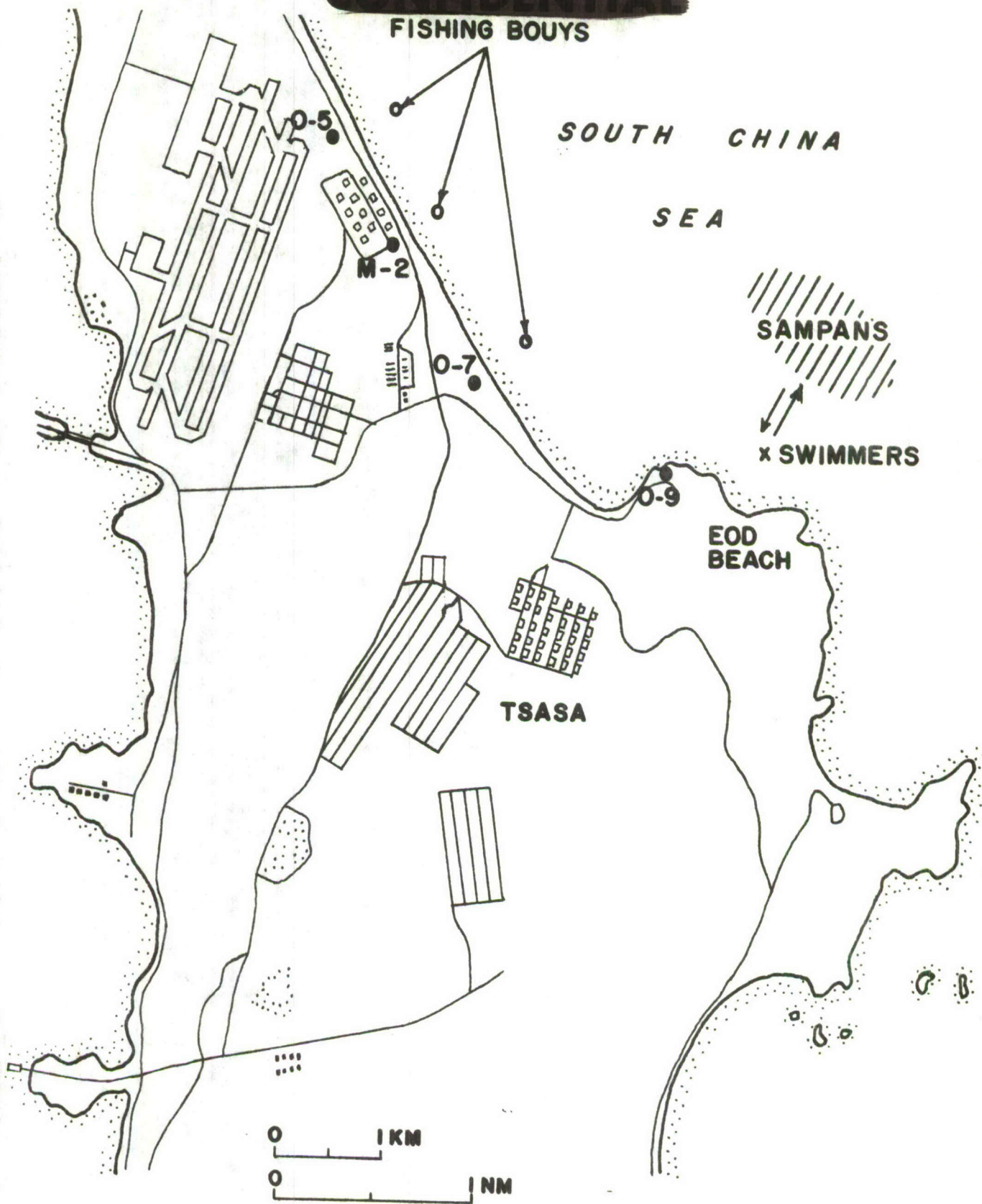


FIGURE 10. Seaside activity near Tri-Service Ammunition Storage Area.

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The JDOC log entry at 0921 hours further demonstrated the restrictions imposed by the Rules of Engagement: ^{67/}

. . . guard reports that a sampan is firing on an outpost at CP125196 [Army guard located south of 0-9]. JDOC advised the guard will return fire if (fired) on again. Permission granted . . . to return fire in self-defense.

The response by the patrol junks from the 26th Coastal Group was less timely. A "Yabuda" junk allegedly searched the area east of the TSASA at 1020 hours with negative findings. ^{68/}

As the enemy eluded the final attempts to capture him, the last high-order detonation occurred at 0730 hours, but the sky rained dust particles for several hours, and small explosions and fired continued in the Tri-Service Ammunition Storage Area for several days--signs to remind all at Cam Ranh Bay Air Base that it had been the target of a devastating, well-planned, expertly-executed attack.

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CHAPTER IV

POST ATTACK ANALYSIS

Enemy Tactics

Approximately ten days after the sapper attack at Cam Ranh Bay Air Base, a speaker at the Phu Yen Provincial (VC) meeting reported the details of the assault. A Hoi Chanh, an attendee of the meeting, revealed that six members from the 407th Sapper Battalion were responsible for the success of the attack. The Viet Cong claimed that they destroyed 100 tons of ammunition and killed 20 Americans at Cam Ranh without losses to their own forces.^{69/}

Prisoner of War reports of past attacks in the Cam Ranh area indicated that sapper teams normally were comprised of six individuals.^{70/} An OSI report alluded to the size of the force which penetrated the TSASA; five VC, sighted on 26 August to the northwest of the air base, told an ASP agent that they had been successful in "blowing up" Cam Ranh Air Base.^{71/} Detections of three sets of footprints at end of the TSASA on the morning of 25 August suggested that a six-man team had split into two three-man demolition cells.

The sappers probably gained access to the peninsula via sampan. They presumably were cognizant of the laxity in enforcement of the three-kilometer restricted zone and were assured that no reaction would be encountered even if they were detected. They probably used a sampan to beach, rather than swimming, due to the requirement to transport supplies.^{72/}

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Once on the peninsula, the enemy had several well-concealed avenues of approach available to him. The sapper team possibly divided into two cells prior to penetration into the munitions area; one cell may have entered in the vicinity of BR-7/12 on the northern side and the other conceivably breached the perimeter in the area between T-3 and T-5, where there had been numerous probes. The actual location of ingress can only be surmised. A Security Police message stated: "No hard evidence exists to indicate routes of ingress or egress of the sappers."^{73/}

The intruders could have crossed the perimeter during daylight or evening hours. During the twilight period of evening, dimness of light would hinder detection, and canine posts would not be manned. The enemy most likely waited until he was afforded the shield of darkness; this would conform with known enemy tactics.^{74/}

The sappers probably wore the normal attire of loincloth and possibly carried pistols attached to their bodies by lanyards. Footprints indicated that some wore sandals and some were barefoot. They conceivably darkened their skin with charcoal or mud, and they could have rubbed oils or garlic on their skin to help avoid detection by sentry dogs.^{75/}

Analysis did not reveal the composition or number of explosive charges; two casings for two-hour delay chemical pencils, discovered by EOD personnel near BR-20, offered the only material evidence. If the time-delayed chemical pencils were uniform, the dispersion of explosions within the same time-frame disclosed the presence of at least two cells

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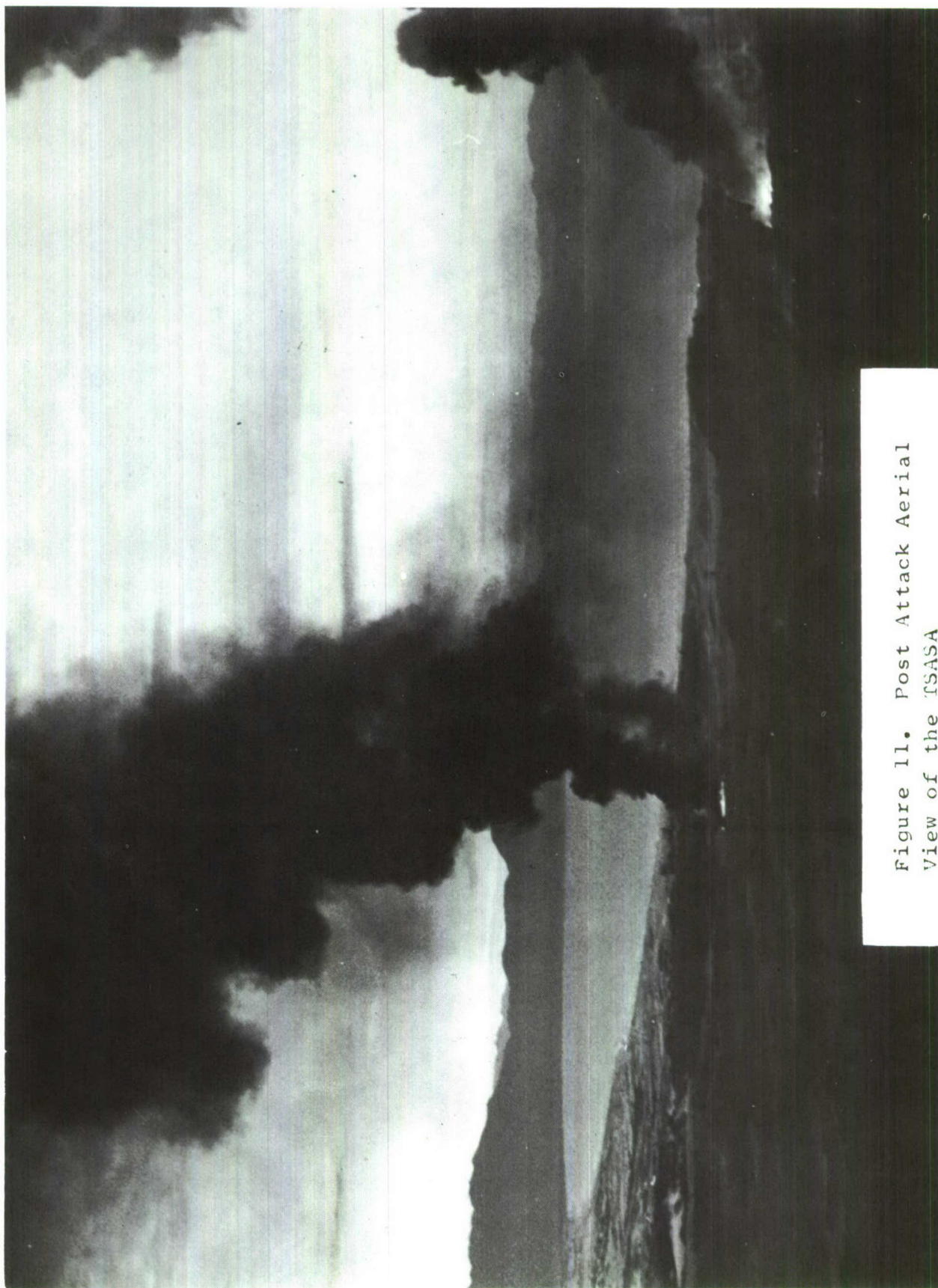


Figure 11. Post Attack Aerial
View of the TSASA

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of sappers. They plausibly placed charges in five or six berms--BR-5, BR-7, BR-12, BR-15, BR-25, and BR-28.^{76/}

The enemy probably stayed in the immediate vicinity of the dump, while security personnel attempted to extinguish the flames and block movement of the suspected sappers. When the security forces withdrew during intensifying explosions and spreading fires, the sappers conceivably used the confusion of the friendly retreat to facilitate their escape. The intruders apparently egressed the area between 0330 and 0400 hours. One cell may have withdrawn in the BR-12/napalm area, and the other group may have escaped in the vicinity of BR-22/Lightning Alpha. The escape routes were logically on the sea side, although security guards reported movement in front of T-3 and on the south end of K-50.

The sappers had the choice of concealment on the peninsula or immediate escape via the sea. The second alternative seemed most likely since the personnel on O-9 observed two swimmers heading seaward from the EOD Beach area. The sampans which recovered the two swimmers may have retrieved others during the period when security personnel could not watch the sampans. The sampans departed with at least two of the sappers who executed a flawless attack.

Defense Forces Reaction

An extract from the Combat Operations After Action Report, signed by the Base Commander, praised the reaction by the Security Police forces. It stated:^{77/}

Reaction by all forces involved in the operation was excellent. Troop response during the recall was orderly, timely and effective. The Security Police Communicator/Plotter at Central Security Control displayed extremely sound judgment in the placement of blocking forces in and around the affected area. The placement of these blocking forces assured safety for the rest of the main base complex, especially the cantonment areas, against possible enemy penetration. Radio discipline was outstanding. All transmissions relative to the enemy action were directed to the Senior Communicator/Plotter on an alternate channel. Security forces showed excellent judgment and stability in conducting the sweeps around the affected area. Supervision of all security forces and augmentee response teams was outstanding.

After the discovery of footprints and the first explosion, interior forces established a blocking force dissecting the TSASA. CSC ordered the perimeter guards to secure their posts to contain the suspected sappers. An additional QRT deployed to the west of the munitions storage area to prevent penetration into the base proper. When the Fire Department personnel entered the TSASA, the area supervisor and members of the QRT and SAT guarded the BR-5 area. Pursuit and attempts to apprehend the enemy were short-lived due to the intensifying secondary explosions. CSC then ordered the perimeter guards to establish a cordon five hundred yards outside the perimeter.^{78/} The QRT from inside the storage area moved down the beach road in order to block northern movement of the enemy force.^{79/}

At 0349 hours, CSC received the first report of injuries. The radio communications reflected a growing concern for the safety of

[REDACTED]

security personnel, particularly the K-42 handler, who was trapped by scattered ordnance and heavy vegetation. At 0536 hours all security personnel had reached safety; the injured had been transported to the hospital. ^{80/}

With the approach of dawn, security efforts focused on the waters to the east of the TSASA. The sentries on O-9 could not fire effectively with the M-60 machine gun on the escaping swimmers, because the range was too great. ^{81/} CSC contacted JDOC for helicopter and watercraft support and the Wing Command Post for helicopters from the 20th SOS. ^{82/} The following is an extract from the 0650 hours entry in the CSC log:

All attempts to obtain chopper assistance and Swiftboat assistance from JDOC have met with negative results. WCP contacted for 20th SOS chopper assistance which also met with negative results.

JDOC relayed the requests to the 26th Coastal Group and Dong Ha Thin Airfield, but the response was slow. The JDOC log entry at 0847 hours read: ^{83/}

Advised AF CSC that Marine Police boat [26th Coastal Group] cannot be contacted. Market Time has patrol craft enroute to locations of sampans. JDOC will have O-1 aircraft aloft in approximately 15 minutes to assist observing sampans and will have radio contact with Market Time boats.

CTOC notified JDOC at 1020 hours that the "26th Fleet checked out the area for sampans with negative findings." ^{84/}

[REDACTED]

Helicopters from the 20th SOS arrived on the scene forty minutes after the initial request from CSC. Two gunships hovered briefly over the sampans and then returned to the air base without firing on the suspected enemy.^{85/} A 483d TAW Intelligence Division study commented on the JDOC version of the incident:^{86/}

(0730 hours: From AF CSC) A guard at CP 109234 /0-9/ reported there were swimmers north of his location. Requested to fire on same. Clearance not received from CTOC. AF CSC advises that sampans in question have women and children on board. Also have fish nets and fish. AF advised to follow MACV Rules of Engagement if fired upon. (Comment: Conversation with CTOC personnel revealed it was JDOC's, not CTOC's, responsibility to grant clearance to fire in that particular area.

Conversation with the CRSS Senior Military Advisor confirmed that JDOC had the authority to grant clearance to fire on the seaside.^{87/} The excerpt and discussion with the advisor displayed confusion regarding the Rules of Engagement.

The reaction by defensive forces seemed adequate, considering the havoc wrought by massive detonations in the TSASA, but flaws surfaced in coordination with external agencies. The enemy already had accomplished his mission.

Inherent Vulnerabilities

In a guerrilla war situation, formidable problems confronted base defense planners. Both environmental and political factors contributed to the vulnerability to enemy attack. In South Vietnam, geography

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and climate particularly aided the enemy's tactics and hindered the Allies' defensive capabilities. Additionally, the insurgency offered no clear-cut method to distinguish friendly from hostile forces. The TSASA at Cam Ranh Bay Air Base possessed vulnerabilities common to other USAF installations in Vietnam as well as specific weaknesses endemic to the peninsula. The resourceful enemy sapper, an expert in covert operations, exploited all physical vulnerabilities and limitations of the human sentry.

The uninhabited, mountainous terrain of the Cam Ranh sector offered relative autonomy to enemy forces within close proximity to the air base. Known enemy base areas existed to the north in the Dong Bo Mountains and to the west in the Ba Cum area.^{88/} The inaccessibility of these locations limited the frequency of friendly ground force incursions. The dense jungle obscured the enemy presence from reconnaissance aircraft.

The enemy could gain access to the peninsula by several means. The irregular South China Sea coastline and the Cam Ranh Bay shoreline with its dense mangrove swamps offered ideal sites for undetected sampan landings. Expansive, unpopulated portions of the peninsula afforded concealment to small enemy forces. The densely-vegetated topography of the southeastern sector of the air base provided particularly suitable avenues of approach to the TSASA. Natural caves, due east of the munitions storage area, were ideal sites for temporary shelter of enemy personnel and for storage of supplies.

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The vast amount of fine-grain sand presented several disadvantages to security forces at CRBAB. Blowing sand reduced the alertness of security personnel and gradually nullified the effectiveness of fences and barriers. Shifting sand dunes enabled an individual to walk over some of the fences along the beach. The fine particles possibly contributed to the high rate of mechanical failure experienced with the security forces' vehicles--an average of 45-48 percent of their vehicles (four-wheel drive) were not operational at any one time.^{89/}

The monsoonal climate adversely affected security measures. Cloud cover reduced visibility for security guards and sometimes prevented aerial reconnaissance. Heavy rainfall nurtured the rapid growth of vegetation. A work order request for defoliation in the TSASA stated the following justification for the project: "The luxuriant vegetation is sufficiently high and dense that a large hostile force could be effectively hidden within the storage area itself."^{90/} Torrential down-pours also caused severe soil erosion which made the terrain more suitable for concealment and inhibited defoliation projects. The high degree of moisture corroded security devices such as fences and trip flares. Rainfall directly affected security by limiting the effectiveness of security personnel and sentry dogs.

Size itself limited security of the air base, when higher headquarters imposed strict ceilings on manpower and resources. The Chief of Security Police alluded to this vulnerability in a discussion about fortifications:^{91/}

[REDACTED]

Bunkers, towers and other fortified positions that currently exist on the perimeter are not satisfactory. Considering the perimeter distance in relation to the number of necessary towers and bunkers, the fortifications are too widely spaced and in some cases inappropriately placed.

Although a force of 28 Security Policemen was probably adequate for the actual area of the ammunition dump, other environmental factors undermined the effectiveness of security measures. Dense vegetation, for example, obscured fields of observation for the guards and reduced the circulation of air, limiting the effectiveness of sentry dogs.

The uniqueness of ammunition storage areas made them especially attractive as enemy targets. Safety considerations necessitated that munitions storage areas be segregated from inhabited areas; therefore, the TSASA was situated approximately two kilometers away from the base proper. A former Chief of Security Police at CRBAB cited another peculiar vulnerability of ammunition storage areas: ^{92/}

Inquiries into the vulnerability of the ammunition stored in this facility [TSASA] have revealed that every required device necessary for destruction of the storage area is present at that location, i.e., dynamite, blasting caps, detonating cord, etc. There is general agreement that a knowledgeable agent, sapper, or saboteur, with only a pair of pliers, could destroy the storage area.

Commanders encountered numerous political constraints in exercising their defense responsibilities. The MACV Rules of Engagement were the most explicit expression of these political restrictions. MACV stated

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the purpose of the Rules of Engagement in the following extract:

The changing nature of operations in the RVN has necessitated the need for a new approach to the employment of firepower. The shift to predominantly small unit operations, coupled with a civilian populace that is becoming more inclined to not observe curfews and restricted areas, makes it imperative to insure against indiscriminate use of firepower. While the goal is maximum effectiveness in combat operations, every effort must be made to avoid civilian casualties, minimize the destruction of private property, and conserve diminishing resources.

The Rules were not designed to limit the defensive reaction to hostile elements, but the requirement to negotiate with the local political administrator to obtain clearance to engage suspected enemy forces was sometimes a time-consuming and costly process. The Cam Ranh mayor's delegation of authority to CTOC, however, facilitated the local procedure. The 483d TAW understanding of the ROE was related in a Special Plan under "Limiting Factors":

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Clearance to fire suppressive artillery on suspected rocket launch sites must be obtained from the Mayor of the Autonomous City of Cam Ranh (Cam Ranh Special Sector). Approval is not guaranteed.

The Rules of Engagement did not account for static defense situations, particularly for a coastal installation. Helicopters provided the only expeditious reaction to the sampans on the morning of 25 August; however, helicopters could not engage watercraft. U.S. Army, U.S. Marine Corps, and U.S. Air Force armed helicopters were not authorized to engage waterborne craft of any description in international or RVN territorial

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(coastal) waters. This restriction did not deny aircraft commanders the right to return hostile fire in the exercise of self-defense. Stringent enforcement of the ROE and publicized prosecution of military officers who allegedly violated the Rules engendered hesitancy of control agencies to act upon requests for clearance to fire against suspected hostile forces. The conflicting statements of JDOC and CTOC personnel vividly demonstrated uncertainty among individuals vested with authority.

The only available record of clarification of the ROE Cam Ranh was a letter from USASUPCOM, dated 10 December 1969. It read: "The MACV Rules of Engagement have been interpreted by this command to fit the unique situation of Cam Ranh Peninsula."^{95/} An obvious omission was the lack of guidelines to cope with the frequent sampan violations.

Political pressure largely accounted for the laxity in enforcement of the three-kilometer restricted waters of the South China Sea. A MACV Team Provincial Status Report, dated 2 July 1970, described the problem:^{96/}

There was an increased number of incidents directed against U.S. installations on the Cam Ranh Peninsula. The reaction of U.S. security forces to this stepped up activity resulted in . . . the death of one fisherman, the wounding of another local citizen and complaints that personnel on patrol boats were damaging fishing traps and unduly harassing fishermen found in restricted areas by roughing them up, stealing their equipment, and damaging their boats... The infiltration of sappers into U.S. installations could be calculated to damage U.S.-Vietnamese relations in view of the anticipated reaction of U.S. security elements.

[REDACTED]

Cam Ranh Special Sector's political boundaries, not distant from the air base, limited friendly operations directed at known enemy locations in the border region. Time-consuming coordination procedures with Khanh Hoa provincial authorities deterred frequent thrusts against the small, local force units that were sighted often in the northwestern sector of the CRSS.^{97/}

The lack of control over the adjacent indigenous civilian population posed an unusual vulnerability for CRBAB. A large number of local Vietnamese daily entered the air base (Approximately one thousand Vietnamese were employed on the air base in August, 1971; nine local nationals worked in the TSASA).^{98/} PACAFM 207-25, Security Policy and Guidance for Guerrilla/Insurgency/Limited War Environments, described the threat of the work force under a discussion of enemy intelligence gathering methods: "...other information they [the enemy] will try to obtain by coercing or enlisting the aid of local civilians and local base employees."^{99/} Security checks on base employees were not always thorough. A CHECO Report on base defense cited corruption among district and province chiefs: "...furnishing labor passes for employment on base on the basis of fee rather than the best available security check."^{100/}

A large number of Vietnamese civilians resided on base without any security check whatsoever. The OSI report of 27 August, which indicated that five to six females had passed information to the VC prior to the attack, alerted base officials of the potential threat posed by the unauthorized residents. Although actual numbers of illegal residents

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were not determined, a 48-hour amnesty program initiated by the Wing Commander on 22 September permitted exit from the base of an estimated ^{101/} 250-300 Vietnamese females.

The unauthorized individuals gained access to the air base by various means. Interrogation reports indicated the majority of those questioned (128) were admitted to the base by security personnel (both USAF Security Police and U.S. Army Military Police). ^{102/} Many were hidden in vehicles of civilian contractors and military persons, and some possessed falsified base passes or papers authorizing air travel from CRBAB. The corruption among government administrators and security guards, voluminous traffic of employees and vehicles through the gates, and the expansive area of the peninsula with inadequate access control points for both installations and indigenous communities--all contributed to the problem.

If the security police apprehended illegal residents and turned them over to the National Police, there was no guarantee against their immediate return to the air base. Trespassing on CRBAB was not a violation of Vietnamese law. National Police usually released the offenders within several days for a nominal fee, unless substantive evidence indicated the person was a Viet Cong or a Viet Cong-sympathizer. ^{103/}

The enemy was known to exploit the inattentiveness of the human sentry. The enemy sapper generally believed that the sentry was ineffective; according to one captured prisoner, "many of the guards were considered generally inattentive, lazy, and careless." ^{104/}

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Many factors contributed to inattentiveness; a fatigue study evaluated the effects of length and time of shift, environmental conditions, morale, nutrition, etc. The study revealed that a guard's alertness deteriorated noticeably beginning on the fourth hour and peaking at the sixth hour of an eight-hour shift. It further stated: "The length of the shift was found to be fatiguing, but more than the length of shift was the period during which the shift took place, the hours of darkness . . ."^{105/} The official manual of security guidelines, PACAFM 207-^{106/}25, recognized the vulnerability of the guard:

The great majority of [enemy sapper] actions will take place at night, usually in the first two or three hours after midnight, when the alertness of the defenders is at its lowest.

The local Chief of Security Police believed that the concept of one man per position for eight hours expected too much from the guards. He also stated that the performance of duty by Security Policemen was substandard due to insufficient training and inferior dedication to duty.^{107/} He subjectively evaluated the squadron's effectiveness at less than 60 percent.^{108/} It is beyond the scope of this paper to assess the competence of the individuals guarding the TSASA; however, many factors could have contributed to the human vulnerability, allowing undetected ingress of the sapper force.

Defense Deficiencies

The concepts of defense extant at the time of the assault were taken largely from Army Field Manuals and from lessons learned by

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numerous trials and costly errors. The first USAF policy directive to provide operational guidance for an in-depth internal security program for USAF installations in an insurgency environment was PACAFM 207-25

20 May 1968.^{109/} The manual stated: "The procedures, standards, equip-

ment and personnel required by PACAFM 207-25 are applicable to all USAF units in RVN."^{110/} Numerous staff assistance teams noted the discrepancies

between prescribed and actual conditions. The Chief of Security Police asserted:^{111/}

There was complete disregard for defense tactics outlined in PACAFM 207-25 and AFM 206-1 in arriving at conclusions for expenditures for protection of the resource [TSASA].

PACAFM 207-25 emphasized defense-in-depth and outlined a model of three zones--preventive perimeter (outermost ring), secondary defense,^{112/} and close-in defense. It also described necessary physical security safeguards for protection of vital resources. Adherence to the outlined security measures could have minimized the likelihood of a successful attack against the TSASA.

The manual explicitly defined each of the defensive rings. The preventive perimeter consisted of a series of elevated, hardened observation/gun positions allowing complete surveillance of the perimeter. The secondary zone contained mobile units capable of delaying the advancement of enemy forces and provided additional detection capability. Close-in security was used around areas of important operational resources. These forces supported primary and secondary forces and prevented sabotage or

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sapper penetration into their respective areas.^{113/} The Base Defense Officer at CRBAB stated that only close-in defense was manned adequately at the TSASA, forming an "island" defense.^{114/}

The Chief of Security Police cited weaknesses of the preventive perimeter:^{115/}

Bunkers, towers and other fortified positions that currently exist on the perimeter are not satisfactory. In some cases, the doctrine of ground tactically vital to observation or defense is neither occupied nor covered by fire.

A former security police commander analyzed the outer defenses of the air base with particular reference to the TSASA:^{116/}

The east and west sides of the AF TAOR [Air Force Tactical Area of Operational Responsibility] are critical defense areas because of terrain and dense jungle-type vegetation. The existing belief that the USAF TAOR is protected on both ends by other Free World Forces is false because of the extended distance between our perimeter and the locations of U.S. Army security forces. The USAF portion of the Tri-Service Ammo Storage Area, located in the southeast portion of our TAOR, for example has absolutely no distant perimeter protection because the closest allied force security is at least three miles in distance. This facility is therefore provided security in an "island concept." This concept by its nature allows enemy elements an opportunity to approach within a hundred yards of storage perimeters without detection or harassment.

The observation posts along the eastern shoreline offered limited fields of observation and fire. The sentry on the most southern Air

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Force observation post (0-9), for example, was unable to observe coves which were favorable landing sites for sampans. The guards did not possess sufficient weaponry after 7AF withdrew authorization for the .50 caliber machine gun.^{117/} JDOC did not grant 24-hour clearance to conduct Harassment and Interdiction (H&I) fire until 12 August 1971.^{118/}

Shortcomings of external defense on the seaside increased the pregnability of the irregular coastline. Helicopters from Dong Ba Thin periodically conducted visual reconnaissance along the eastern shoreline, but the Rules of Engagement nullified their firepower capability against sampans and swimmers in restricted waters. JDOC would not permit helicopters to fire warning shots in the vicinity of sampan violators.^{119/} The watercraft from the 26th Coastal Group seldom patrolled the waters east of Cam Ranh Peninsula and reacted slowly to notification of sampan violations. Requests for the aid of "Yabuda" junks began at CSC, and went to CTOC via JDOC. CTOC relayed the call to the 26th Coastal Group. CTOC rarely could establish immediate radio contact with the slow-moving boats (six to eight knots per hour).^{120/} The indisposition of the 26th Coastal Group to apprehend sampans and turn the occupants over to the National Police further negated the effectiveness of waterborne forces.*

*The local fishermen were not knowledgeable nor equipped for deepwater fishing; therefore, they fished over the continental shelf, which lay within the three-kilometer restricted zone. Most of the sampan operators were aware of the restricted zone, because of the annual requirement to register sampans. An additional channel of communication from the

[REDACTED]

The vulnerabilities of the secondary defense zone made the southeastern section of the air base more attractive to enemy sapper units. Heavily-vegetated, rugged terrain and few access roads hindered the capability of secondary defense forces. No sensors, land mines, trip flares, wire barriers, nor any other detection/delay devices blocked likely avenues of approach. In June, the Army deployed Reconnaissance (Recon) Teams southeast of the TSASA. The Chief of Security Police questioned their value because of the expansive area in relation to the number of teams. The presence of friendly forces in the region curtailed the use of 81mm mortar H&I, the only means to deny the area to the enemy prior to June.^{121/} JDOC's failure to maintain current, precise locations of the Recon Teams delayed approval of requests to fire in the TSASA sector.^{122/}

Local security police officials believed that the greatest contributory cause for the enemy success on 25 August was the lack of adequate physical security safeguards surrounding the TSASA.^{123/} A previous security police commander affirmed the importance of physical security safeguards:^{124/}

government to the fishermen was through a local union, in which most of them had membership. The impracticality of the three-kilometer restricted zone, reinforced by political constraints (the father of the head of the 26th CG was a local fisherman), engendered laxity in the Vietnamese enforcement of the coastal waters.

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Physical security facilities of permanent design and of sufficient capability to detect, hamper, and restrain the enemy are absolutely mandatory to assist security force personnel in providing protection from enemy forces in the SEA environment.

No evidence revealed that emplacement of security safeguards was a consideration during the construction of the munitions storage area; records of ill-fated attempts to remedy defense deficiencies dated back to 1967.^{125/} The 483d Munitions Branch and the 483d Security Police Squadron submitted numerous work requests, citing extensive justification for projects to install perimeter fencing and lighting and remove the luxuriant foliage at the TSASA.

Base security manuals, namely PACAFM 207-25, and special studies of base defense in the RVN clearly outlined the necessity of physical security safeguards. The Explosives Safety Manual, AFM 127-100, described both security and safety requirements for ammunition storage areas.

The Explosives Safety Manual lucidly stated the requirement for fencing:^{126/}

An explosives area will be separated from administration, residential and entirely unrelated inert and warehouse areas by fences and unauthorized persons will be prohibited from entering the area.

PACAFM 207-25 expounded on the function and limitation of fencing:^{127/}

Fencing, while a primary consideration in barrier plans, is merely a deterrent which can be quickly surmounted or demolished unless it is kept under

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continual observation. In a high threat area, and where local conditions permit, other area denial measures should be used in conjunction with fences.

Without proper illumination and adequate vegetation control, security personnel could not detect intrusions through wire barriers. PACAFM 207-^{128/}25 noted the importance of security lighting:

In insurgency, guerrilla and similar limited war operations, darkness is one of the greatest allies of the enemy. Security lighting systems are essential. Where and how they are to be used will depend on circumstances peculiar to the situation. . . . Lights should be permanently installed The purpose of the lights is to illuminate approach routes and to allow observation posts to keep fence lines under surveillance.

Dense vegetation growth reduced visibility of security guards and impaired the effectiveness of sentry dogs. A CHECO Report on base defense described how thick foliage aided the enemy:^{129/}

Tall grass and dense vegetation assisted the sapper penetrate the defenses. Besides affording protection while conducting surveillance and reconnoitering the base, sappers would move into deeply vegetated areas adjacent to the base the day before the assault.

Base officials and visiting staff teams recognized the hazardous condition of the TSASA, but attempts to rectify the vulnerabilities were fruitless. A letter from the Chief of Safety, 12th Tactical Fighter Wing, dated 8 May 1969, evidenced long-standing discrepancies:^{130/}

[REDACTED]

Vegetation control does not meet the requirements of . . . AFM 127-100. Recommend immediate action be taken to clear 50-foot fire break and to remove combustible material from storage areas. . . The Tri-Service Area is not entirely surrounded by fence and unauthorized persons may enter via a road which is not guarded.

His letter recounted past attempts to control vegetation in the TSASA-- dating back to 13 July 1967. He summarized the results of previous requests: "To this date no action has been taken."^{131/}

Review of the most recent work requests for security projects prior to the destruction of the TSASA disclosed security deficiencies that prevailed at the time of the attack. Related correspondence revealed the rationale behind the disapproval of the projects. The following work requests represented efforts to improve defensibility of the ammunition storage area:

- (1) CRB 63-1. Project to construct security lighting along the entire perimeter, including the TSASA. 483d CES submitted to 7AF on 4 November 1970. 7AF notified 483d CES on 5 August 1971 of project cancellation.
- (2) CRB 69-1. Project to install chain-link fence around the TSASA. 483d CES submitted to 7AF on 8 October 1970. 7AF dispatched a letter to 483d CES, dated 5 December 1970, which disapproved project and requested 483d CES to resubmit work order for concertina wire fence.
- (3) CRB 53-1. Project to install concertina wire fence around the TSASA. 483d CES submitted to 7AF on 30 December 1970. 7AF notified 483d CES on 5 August 1971 of project cancellation.
- (4) CRB 122-1. Project to clear vegetation in the TSASA. 483d CES submitted to 7AF on 28 March 1971. Pending approval at time of attack.

[REDACTED]

The work request for chain-link fencing around the TSASA included
ample justification:^{132/}

Fencing of the Tri-Service Storage Area is required by . . . AFM 127-100. Base Defense personnel consider fencing essential to their protection of the area. The large amount and high value of the munitions assets [\$17.5 million] stored in the Tri-Service Area would seem to necessitate the best possible security. Adequate fencing is an integral part of an effective base defense program.

The work request listed concertina wire fencing as an alternative, with the following qualification: "(Neither single nor triple strand concertina wire fencing) would afford the degree of protection attainable by chain-link fencing."^{133/} The proposed appropriation for the project, \$276,100, largely accounted for 7AF disapproval. An extract from the 7AF response read:^{134/}

Concertina wire is an approved, practical, more economical alternative for satisfying safety requirements to fence the base Tri-Service area. Request you prepare programming documents specifying concertina wire instead of chain-link fencing.

The altered work request, CRB 53-1, specified concertina wire fencing at a proposed cost of \$36,400. The 7AF Real Property Resource Review Board (RPRRB) approved the project on 26 April 1971, but subsequent review precluded actual construction. After resubmission of the project, calling for installation of five-strand concertina wire fencing, the Chief of Security Police expressed his disfavor:^{135/}

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Figure 12. Aerial View of the
Vegetation around the TSASA

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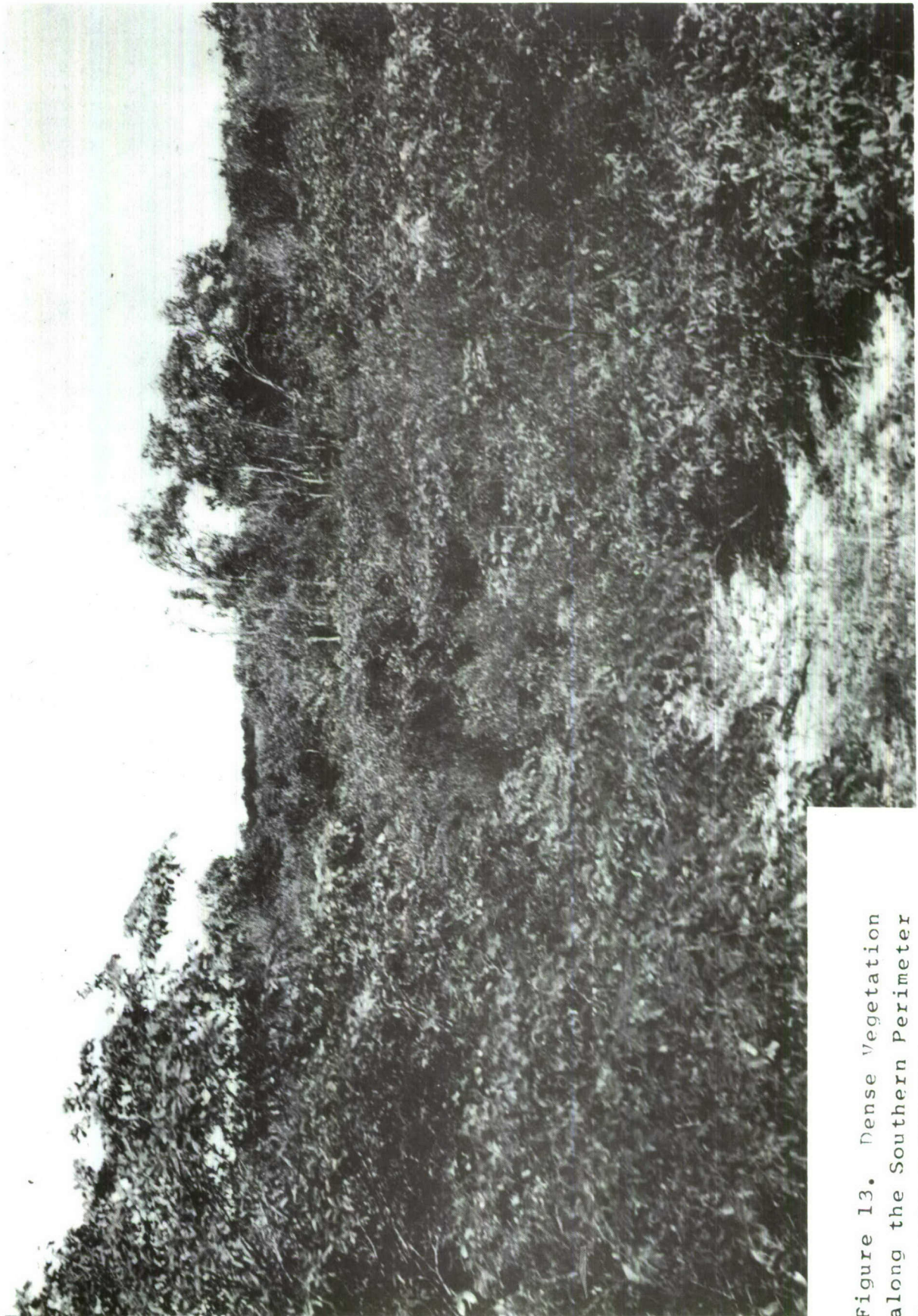


Figure 13. Dense Vegetation
along the Southern Perimeter
Access Road (TSASA)

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It is requested that the work order be re-evaluated for approval of the chain-link fencing or some other adequate fencing which will provide a permanent barrier. Concertina wire is not adequate. The present concertina wire fencing in use in RVN is marginal as a barrier and deteriorates rapidly.

The Security Police Commander's letter apparently had no effect.

Attempts to install security lighting on the perimeter of CRBAB, including the TSASA, were negated by disapproval at higher headquarters. Justification for the work request was more explicit than that for fencing. A letter from the security police commander noted the requirement for the lighting system: ^{136/}

Perimeter lighting is but one of the many physical aids [for security] but is one of the most important. Lessons learned have proven that detection of sapper and other enemy ground forces is directly proportional to the amount of perimeter lighting. PACAFM 207-25 requires that all base perimeters be well-lighted. In addition, the HQ USAF (IGS) Staff Assistance Team Chief, during his visit in late July, directed that a request be submitted to provide a complete lighting capability as soon as possible. . . It has been and remains impossible to detect well-trained sappers attempting to gain access to our TAOR due to the lack of adequate lighting. Night observation devices are nearly useless when there is no lunar illumination, when it is raining, or when the wind is blowing sand. At present there is no known substitute for good perimeter lighting . . . Perimeter lighting has been and remains the best deterrent to sappers and other enemy ground forces.

The work request forwarded to 7AF contained economical justification for the \$184,700 project. An excerpt from the work request read: ^{137/}

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Due to irregular terrain and high vegetation it is virtually impossible to detect small enemy forces, especially during periods of low lunar illumination. The use of flares has been the only successful means of illuminating a large area and providing a good perimeter defense. The annual cost of using flares amounts to well over \$100,000, which is justification in itself to implement a more economical system.

The 7AF Real Property Resource Review Board approved the request, but the outcome paralleled that of the concertina wire project. Written correspondence and telephone conversation between MACV and 7AF from 26 April 1971 through 27 July 1971 dealt jointly with CRB 53-1 and CRB-63-1. A letter from the MACV Director of Construction to the Commander of 7AF, dated 27 July 1971, closed the intensive review of the projects. It stated: "Projects cannot be favorably considered at this time unless potential for long term utilization of proposed facilities can be established."^{138/} On 5 August 1971, 20 days before the attack, 7AF notified the 483d Civil Engineering Squadron at Cam Ranh^{139/} that the project was disapproved.

The request to defoliate the TSASA, CRB 122-1, was the most expensive effort to improve security; the proposed appropriation amounted to \$600,300. The lush vegetation created both a safety hazard and security predicament. A work request from the 483d Munitions Branch gave impetus to the defoliation plan. The Chief of the Munitions Branch^{140/} wrote the following justification:

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The present luxuriant vegetation is sufficiently high and dense that a large hostile force could be effectively hidden within the storage area itself. Removal of the underbrush would eliminate a conspicuous security problem in the protection of munitions assets.

While the project was under review, 7AF emphasized the importance of vegetation control in a letter to all 7AF installations, dated 12 June 1971: ^{141/}

The maintenance and control of vegetation is the responsibility of the Base Civil Engineer; however, requirements must be made known through established channels so that equipment can be programmed and personnel scheduled for the task . . . Vegetation control will be an item of special interest on future inspections and staff visits.

In response to the 7AF directive, the 483d CES concentrated efforts on vegetation control at the northwestern perimeter and the TSASA. As of 27 July 1971, they had cleared underbrush back for one hundred feet around each berm (from the concrete slabs). ^{142/}

The lack of the most basic safeguards of perimeter lighting, fencing, and vegetation control; and the absence of any additional detection devices such as trip flares, infrared sensors, seismic sensors, geomagnetic detectors, etc.,* placed the burden of defense on 28 security policemen and 11 sentry dogs.

*There were five starlight scopes at the TSASA on 25 August.

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Revised concepts of security manning and improved training programs for security personnel could have minimized the vulnerabilities of the human guard, which were discussed in the previous chapter. More frequent relief of the sentries, for example, would have reduced the monotony of a long duty shift. Movement of the five tower guards to mobile ground positions during periods of poor visibility would have enhanced the detection capability. ^{143/}

PACAFM 207-25 and AFM 206-1 advanced the theory and guidelines for security manning, but as a CHECO report on base defense noted, the policy was no substitute for the light infantry training and experience required for security police forces in SEA. ^{144/} The local Chief of Security Police listed some deficiencies of his personnel: ^{145/}

...job knowledge and practical application in combat role limited....poor combat preparation technically and academically....poor realistic training program due to lack of time and personnel available.

A rudimentary course on infantry tactics, lasting approximately two weeks, and an introductory course on heavy weapons, a class of short duration, did not prepare the individual adequately. ^{146/}

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CHAPTER V
POST ATTACK CHANGES

The devastation of the attack on 25 August alarmed the officials at Cam Ranh Bay AB and higher headquarters about the vulnerabilities of the air base to future sapper assaults. Some improvements of defense ensued immediately, but many deficiencies persisted. The de-escalation of the war for US forces curtailed long-range improvements; the limited funding for construction projects and the impending withdrawal of American security forces painted an ominous picture of the future.

The immediate response to improve defenses in the TSASA was the massive, hazardous task of EOD in clearing access roads and perimeter of the munitions storage area. A reduced number of security personnel and canine teams then provided defense in a "point defense" concept of deployment. ^{147/}

Increased helicopter support enhanced external defense and surveillance. Helicopters from Dong Ba Thin flew an additional visual reconnaissance mission every day, and after the sixth of September, two helicopters from the 20th SOS augmented the airborne defensive forces. One aircraft was on fifteen-minute alert and the other on sixty-minute alert. ^{148/} The heightened readiness was temporary; the number of VR missions flown by DBT helicopters again decreased to two per day and the 20th SOS discontinued participation in the base defense role after the October national elections. ^{149/} The de-activation of the 183rd Reconnaissance Airplane Company eliminated the local O-1 "Bird Dog" flights. ^{150/}

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The Vietnamese Navy stationed two small watercraft off the southern portion of the peninsula and another boat off the northern sector. Assignment of U.S. personnel to the boats improved liaison, but later reduction of the manpower of MACV Team 30 adversely affected the program. Surveillance and reaction to sampan violators soon deteriorated.^{151/} The Wing Commander cited watercraft surveillance and response in the restricted waters of the South China Sea as the major defense deficiency both before and after the attack. He stated:^{152/}

...the three kilometer restriction is not enforced due to inability of the JDOC and US Navy to control the reaction and response of the Vietnamese Navy which now has the responsibility to patrol the coastal waters and enforce the restriction.

The 483rd TAW Commander and Base Commander intensified efforts to control access to the air base. An amnesty program encouraged the departure of many unauthorized Vietnamese females residing on base; and more explicit, better-enforced directives pertaining to illegal harboring of local nationals discouraged the return of many of the violators.^{153/} The Wing Commander described the changes:

The Air Base has been closed to all persons except those on official business and casual traffic has been reduced to a minimum. All female trespassers have been banned from the base and all personnel are directed to assist in apprehension of trespassers.

An increased number of security policemen stationed on the perimeter, an expanded program of vegetation control in critical areas, and additional portable lighting units at likely penetration points improved

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internal security of the air base. Construction of permanent-design physical security safeguards and acquisition of intrusion devices could not be justified during the phase-down of CRBAB.^{154/} The Chairman of the 7AF RPRRB described the conditions which were the cause for the moratorium on construction:^{155/}

...the outlook for the future would be one of continually decreasing construction resources, men, money, and materials . . . With the decreasing US presence in Vietnam the time lag between project approval and accomplishment will necessarily lengthen.

Whereas the Air Force was unable to construct security aids, the Army responded with greater urgency and emphasis in the improvement of physical security of their portion of the Tri-Service area. The USASUPCOM requested sensor equipment and used "in-house" resources to fortify the perimeter of the Army sector. They enclosed the munitions storage area with concertina wire fencing, employed security lighting, and used a Balanced Pressure System (BPS).^{*} The Army also installed an Integrated Observation Site (IOS) on the hill above O-9.^{**156/}

The Wing Commander stated the only recourse for air base defense:^{157/}

The only solution [for internal defense] is rapid and complete phase-out of the Tri-Service Ammunition Storage Area and the Beach Ammunition Storage Area. . .Phase-out of the TSASA will reduce perimeter defense requirements and allow a significantly better defense line to be established on the eastern perimeter.

^{*}BPS is a system consisting of two underground, parallel pressure lines that register seismic disturbances.

^{**}IOS is an observation site with telescopic capability for long-range surveillance.

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CHAPTER VI

CONCLUSIONS

The apparent ease and obvious success of the sapper attack against Cam Ranh Bay Air Base on 25 August 1971 added another chapter to the chronicles of guerrilla warfare. The assiduous enemy continued to exploit propitious conditions, cunningly using inherent base defense vulnerabilities to his advantage. Acknowledging the enemy's effectiveness and understanding his tactics are valuable to base defense planners, but it is equally important to recognize security and defense shortcomings. What might be learned from the costly experience at Cam Ranh?

A myriad of factors undermined defenses of many installations in South Vietnam. Disguised insurgents mixed freely among the indigenous populace, and stringent political constraints degraded effective reaction to suspected enemy forces. Environmental conditions of the tropics further imposed circumstances that were not described in USAF manuals of base defense doctrine during the initial construction phase. Construction preceded the establishment of guidelines for defense in a limited war situation in SEA; therefore, many air bases in RVN, including Cam Ranh Bay Air Base, were planned and built without due consideration of defensibility. Failure to correct the natural erosion of defenses and adapt to the enemy's increasing emphasis on sapper attacks was another major shortcoming.

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The waters surrounding Cam Ranh Peninsula protected the air base from large-scale ground assaults. But when the enemy concentrated on sapper activity, the environs of Cam Ranh Bay Air Base became a liability for security forces. Defense forces were not given adequate means to counter the threat from the sea. After the August attack, USARV (United States Army, Vietnam) published a supplement of the Rules of Engagement for installations; yet it did not clarify measures to determine what constituted hostile acts by swimmers or sampans.

When the enemy stressed economy-of-force tactics after 1968, ammunition and POL storage areas became more attractive targets because the enemy could inflict heavy losses with minimum expenditure of people and weaponry. The design of these storage areas rendered them vulnerable due to safety considerations of distance separation from inhabited areas. The unpopulated, rugged, heavily-vegetated terrain and irregular coastline near the TSASA offered favorable avenues of approach for small enemy teams.

The successful sapper attack re-affirmed the validity of policy and guidelines outlined in base defense manuals. The failure to construct adequate physical security safeguards at Cam Ranh Bay Air Base, caused by an unwillingness to appropriate funds, violated the directives for security of USAF installations and resources. In response to a question regarding the lessons learned, the Wing Commander echoed the advice of security directives. He said: ^{158/}

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Any future planning for or construction of ammunition storage areas must provide for security fencing, perimeter lighting, vegetation control, guard towers, integrated observation sites and systems and appropriate external security within the enemy heavy mortar range (3000 meters). Dependence on guards and sentry dogs or security policemen in guard towers is foolhardy. Weather conditions quite often reduce the capability and effectiveness of these countermeasures to a totally unacceptable degree. Fencing, lighting, roving internal and external patrols and the most up-to-date night vision devices must be used in combination to prevent sapper penetration or stand-off attacks by mortar or rockets.

Uncorrected defense deficiencies at Cam Ranh still allowed the enemy continued success at his discretion. The last chapter on Cam Ranh may not be rewritten, but illumination of the Cam Ranh incident may engender greater emphasis on the security mission, specifically, the emphasis on construction of security safeguards. Timely correction of security deficiencies may prevent losses of American lives and millions of dollars in the future.

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Figure 14. Remains of Berm Six

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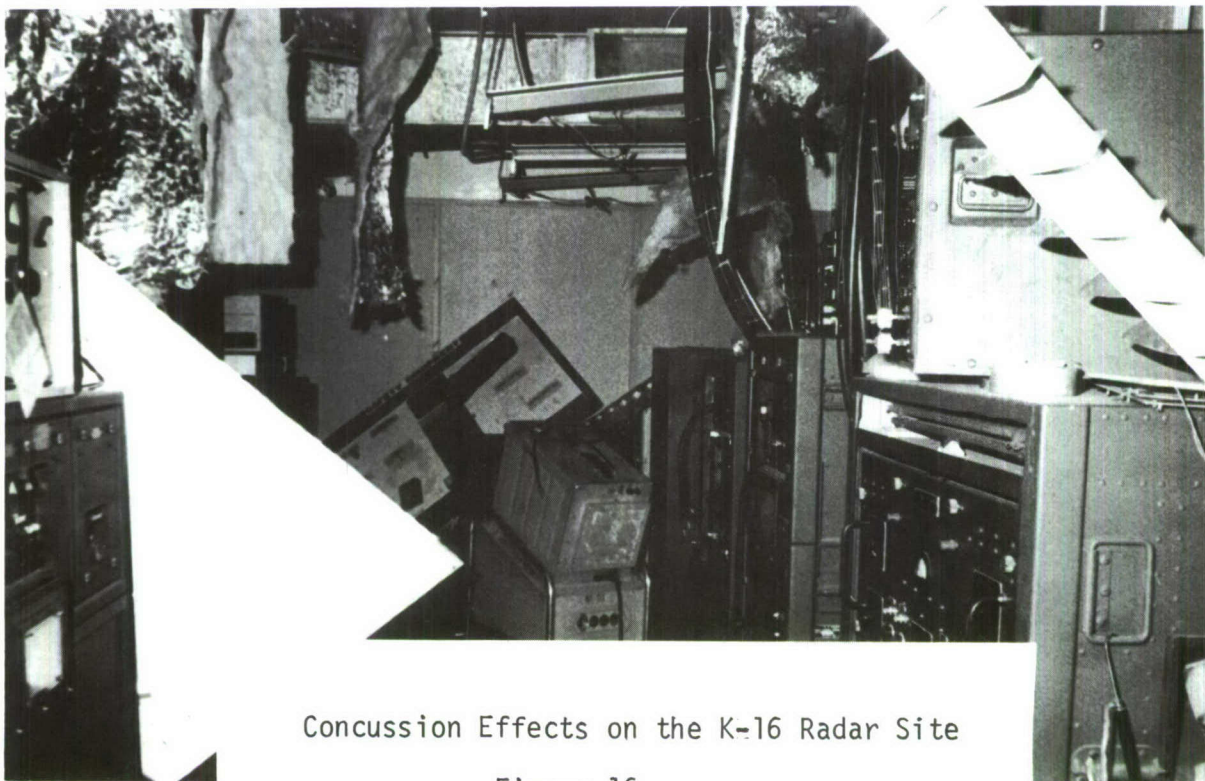
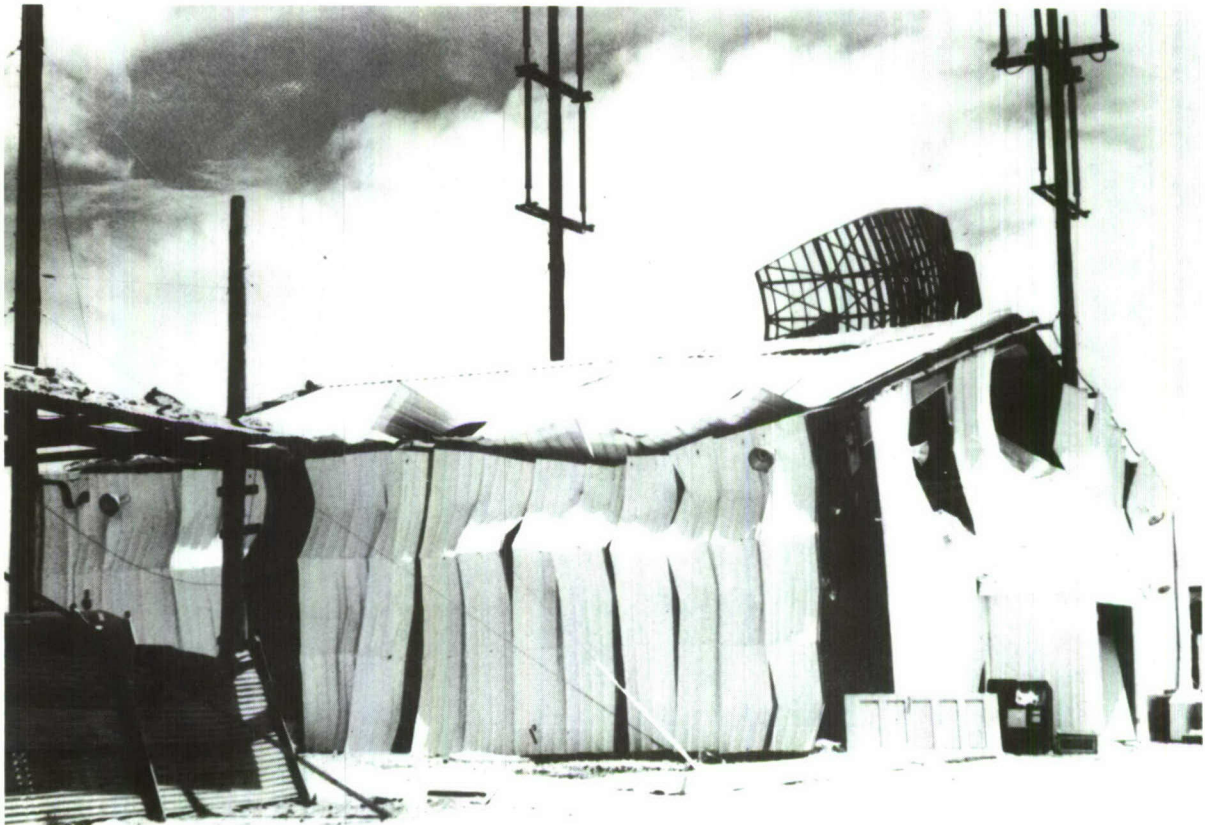
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Figure 15. Scattered Debris
outside a Revetment

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Concussion Effects on the K-16 Radar Site

Figure 16

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FOOTNOTES

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CHAPTER VI

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GLOSSARY

ABF	Attack-by-fire
AFM	Air Force Manual
ASP	Area Source Program
BPS	Balanced Pressure (Detection) System
BR-#	Berm Number
CES	Civil Engineering Squadron
CRBAB	Cam Ranh Bay Air Base
CRSS	Cam Ranh Special Sector
CSC	Central Security Control
CTOC	Combined Tactical Operations Center
DBT	Dong Ba Thin (Airfield)
EOD	Explosive Ordnance Disposal
FSB	Fire Support Base
GVN	Government of Vietnam
H&I	Harassment and Interdiction
Hq	Headquarters
IOS	Integrated Observation Site
JDOC	Joint Defense Operations Center
K-#	Canine Team Number
K-9#	Canine Team Number
MACV	Military Assistance Command, Vietnam
NEW	Net Explosive Weight
NVA	North Vietnamese Army
O-#	Observation Post Number
OPLAN	Operations Plan
OSI	Office of Special Investigations
PACAF	Pacific Air Forces
PACAFM	Pacific Air Forces Manual
POL	Petroleum, Oil, and Lubricants

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QRT	Quick Reaction Team
Recon	Reconnaissance
RF	Regional Forces
ROE	Rules of Engagement
ROK	Republic of Korea
RPRRB	Real Property Resource Review Board
RVN	Republic of Vietnam
SACON	Security Alert Condition
SAT	Security Alert Team
SEA	Southeast Asia
SOS	Special Operations Squadron
SPCC	Security Police, Commander
T-#	Tower Number
TAOR	Tactical Area of Operational Responsibility
TAW	Tactical Airlift Wing
TCN	Third Country Nationals
TFW	Tactical Fighter Wing
TSASA	Tri-Service Ammunition Storage Area
USARV	United States Army, Vietnam
USASUPCOM	United States Army Support Command
VC	Viet Cong
VR	Visual Reconnaissance
WCP	Wing Command Post